



# Development of Green Space in Dar es Salaam, Tanzania

Faculty of Natural Resources and Agricultural Sciences  
Department of Urban and Rural Development, Division of Landscape architecture  
Master's Thesis at the Landscape architect programme, Uppsala 2014 Cecilia Liljeström and Maria Persson





*Maria Persson and Cecilia Liljeström,  
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Swedish University of Agricultural Sciences  
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Supervisors: Sofia Sandqvist SLU, Department of Urban and Rural  
Development, Dr. Liberatus Mrema, Ardhi University, Tanzania  
Examiner: Professor Rolf Johansson SLU, Department of Urban and  
Rural Development  
Associate examiner: Daniel Eliwaha Msangi, Ardhi University, Tanzania  
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We are proud to present this essay and would like to dedicate a special thank you to some people that have helped us in different ways putting this project together. A special thank you to our supervisors Professor Rolf Johansson, SLU, Sofia Sandqvist, SLU and Dr. Liberatus Mrema at the Ardhi University in Tanzania that have provided us with guidance and knowledge on the way. We also want to thank Maria Ignatieva, SLU and Tom Eriksson, SLU for giving us ideas and inspiration for our project. We also want to thank Katri Lisitzin, SLU and Daniel Eliwaha Msangi at the Ardhi University for taking time to meet us in Dar es Salaam giving us information, support and advice. Last we would like to thank the landscape architect students at the Ardhi University for taking their free time to show us around in Dar es Salaam, giving us valuable information and a pleasant time.

## SUMMARY

In many cities in developing countries, green areas are decreasing due to the fact that the growth of buildings, infrastructure and services has become a priority. As the population increases more buildings and infrastructure are needed and as a result much of the building activity takes the form of uncontrolled settlements, which encroaches the public green space. The decrease in green areas is a serious problem to the city of Dar es Salaam. Green areas benefit the city in many ways like improving the local climate, reducing pollution and improving the city ecology. The few green spaces and the potential green spaces in Dar es Salaam are continually “eaten up” by both planned settlements and uncontrolled settlements.

Dar es Salaam has approximately three million inhabitants, of which about 70 percent are living in informal settlements.

This study contains a proposal for developing the Msimbazi river basin in central Dar es Salaam in Tanzania into a park and recreational area. The project is a Minor Field Study, which means that we were awarded a scholarship from Sida to carry out a field study in a developing country as a basis for our master thesis.

The aim with this study is to make a design proposal for a park and recreation area where the Msimbazi river basin in Dar es Salaam is today.

The Msimbazi river basin is a large area, approximately one by five kilometers. It is located close to the city centre in Dar es Salaam and leads up to the Indian Ocean. The area today consist of some playing fields, footpaths and some urban farming, but apart from this it mostly consists of unused grasslands, swamps and forests. The lack of activities and the neglected environment have made the area into an unsafe place to spend time in. Since the area is very unsafe and badly connected to the rest of the city infrastructure, it has become a barrier that divides the different parts of the city. Areas of informal settlements and dense building structures are adjacent to the site and every year the informal settlements take over more and more of the area. Since the site gets flooded annually it is not suitable as a building site which is the reason that the green area still exists today. The site is physically threatened by the informal settlements that are spreading out, but it is also an area with many positives except for the safety aspect. The annual flood combined with the still shallow water, that is there all year round, creates a good breeding place for malaria mosquitoes. A lot of waste is also being dumped there, which may in the near future become a health hazard to the people in the city. The local authorities currently have no plan for the development of this area.

The area has a great potential of becoming a green park and recreational area that would benefit the population socially as well as health wise and it would also contribute to an improved ecology and economy in the city.

In order for us make a credible proposal we first needed answers to the following questions:

- Are the people in Dar es Salaam in need of a big public park and if so, who would use it?
- Is it physical possible, with all the site specific problems, to transform the Msimbazi river basin into a public park?
- Could some social difficulties, such as crime and segregation be improved with a new park?

The proposal focuses on turning the area into a safe and well used place that could contribute to the everyday lives of the people in Dar es Salaam. A lot of the people living there are very poor and it is therefore not a priority for most of the citizens to visit a park just to relax. Because of this, the proposal focuses on improving the park socially, environmentally and physically and with these improvements becoming an asset to the city residents.

Socially- Work possibilities within the park has been created, for example markets, urban farming and recycling stations. To make the area feel safer several activities have been added, parts have been opened up and a second police station has been placed in the park.

Environmentally- By developing recycling stations and keeping the area clean, the solid and airborne pollutions will diminish. The indigenous plant species will be saved which will benefit the local ecosystem.

Physically- New paths has been added which will make the area seem less like a barrier. In order to stop the informal settlements from spreading further into the park a defined border has been created. The floods can be stopped or more controlled which will make the area usable all year round. By also removing the still water, malaria mosquitoes would not be able to use the area as a breeding ground. Since there is no money to invest in the development of a new park, there is in the proposal a new residential area that will finance parts of the park.

We have chosen to design two areas in detail and to show the rest of the park with a more general and conceptual design.

## SAMMANFATTNING

I många utvecklingsländer håller grönområden på att försvinna på grund av att utvecklingen av större städer går snabbt framåt. I dessa städer sker ofta en kraftig urbanisering vilket gör att infrastruktur, företag och bostäder utvecklas i snabb takt, ofta på en bekostnad av städernas grönytor som är betydligt lägre prioriterade. Urbaniseringen är ofta så kraftig att den planerade bostadstillbyggnaden inte hänger med vilket resulterar i att kåkstäder växer fram, ofta på offentliga grönområden. I Dar es Salaam har andelen grönytor kraftigt minskat, både på grund av nya planerade bostadsområden och tillväxten av kåkstäder. Av Dar es Salaams dryga 3 miljoner invånare så bor ungefär 70 procent i kåkstäder.

Syftet med det här arbetet är att genom ett gestaltningsförslag föreslå hur man kan omvandla Msimbazi river basin i Dar es Salaam, Tanzania till ett parkområde. Arbetet är en Minor Field Study vilket innebär att vi blev tilldelade ett stipendium från Sida för att åka till ett utvecklingsland för att göra en fältstudie att ha som underlag för vårt arbete.

Msimbazi flodområdet är ungefär en gånger fem kilometer stort och ligger nära Dar es Salaams centrum och mynnar ut i Indiska oceanen. Inom området finns bland annat sport fält, en nationell talarplats, gångvägar och lite stadsodling, men förutom detta består ytan mest av skog, träsk och gräsmarker. Avsaknaden av människor och aktiviteter har lett till att området har blivit väldigt otryggt. På grund av otrygghet och dåliga kopplingar till resten av staden har området blivit en barriär mellan olika stadsdelar. Omkring grönområdet så finns det täta stadskvarter och kåkstäder och varje år inkräktar kåkstäderna lite mer på ytan. Eftersom området översvämmas varje år så är det inte lämpligt att varken bygga eller bo där, men trots de dåliga förutsättningarna väljer ändå folk att bosätta sig där på grund av bra läge i staden och de får en låg boendekostnad. Kåkstäderna är det största hotet mot området rent fysiskt men området har också många sociala problem och är otryggt. Eftersom området översvämmas samt har mycket stillastående grunt vatten året om är det en god förökningsplats för malariamyggor. Det slängs också mycket sopor i området vilket förorenar marken och kan inom en kort framtid bli en hälsofara för stadens invånare. Idag finns det ingen plan hos kommunen för hur området skulle kunna utvecklas.

Området har stor potential och skulle kunna bli en central stadspark i staden som skulle komma invånarna i staden till nytta både socialt och hälsomässigt. Parken skulle även kunna förbättra stadens ekologi och ekonomi.

För att kunna skapa ett realistiskt förslag var vi först tvungna att svara på följande frågor:

- Behövs en stadspark i Dar es Salaam och vem skulle i så fall använda den?
- Är det fysiskt möjligt, med alla de problem som finns inom området, att skapa en park här?
- Skulle några av de sociala problem som finns här, som brottslighet och fattigdom, kunna lösas med en park?

Förslaget fokuserar på att skapa en park som kan komma till nytta för invånarna i Dar se Salaam. Ett av huvudmålen var att området skulle bli mer välanvänt och tryggare. Många av människorna som lever i staden är mycket fattiga och deras prioritet är snarare att få ihop mat för dagen än att gå till en park för att ta det lugnt. Detta ledde till att förslaget är inriktat på att förbättra området socialt, ekologiskt och ekonomiskt samt att förbättra de fysiska förutsättningarna och bli till en tillgång för stadens invånare.

Socialt- Många jobbtillfällen skapas, till exempel med marknader, stadsodling och återvinningsstationer. För att parken ska upplevas tryggare har mycket aktiviteter lags till, vissa områden har öppnats upp och en militäranläggning har förlagts dit.

Ekologiskt- Genom att placera in återvinningsstationer och hålla marken ren från skräp kommer föroreningarna att minska, både de solida och de luftburna. Bara inhemska växter kommer att användas vilket kommer att gynna det lokala ekosystemet.

Fysiskt- Nya gångstråk som kopplar ihop de olika stadsdelarna anläggs. För att stoppa kåkstädernas utbredning så har parken fått en tydlig gräns. Inga eller mer kontrollerade översvämningar gör att området kan användas året om och antalet malariamyggor kommer att minska. Eftersom det inte finns några pengar att investera i en ny park, finns ett nytt bostadsområde som ska finansiera delar av parken.

För att kunna göra ett väl genomarbetat förslag så har vi gjort en översiktlig plan för hela området och sedan gått ner och presenterat två områden i detalj.



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# 1. INTRODUCTION







Outlook over the Msimbazi river basin.

# INTRODUCTION

## PREFACE

This study is a master thesis within the landscape architect program at the Department of Urban and Rural Development, the Swedish University of Agricultural Sciences in Sweden.

The planning of the study started in August 2010 with help from Professor Rolf Johansson that has well established connections at the Ardhi University in Dar es Salaam, Tanzania. Through R. Johansson we got in touch with Dr. Liberatus Mrema, researcher and teacher at the Landscape architecture program at the School of Architecture at Ardhi University in Dar es Salaam, who through mail-contact suggested a suitable project for our study.

In October 2010 we were awarded a Minor Field Study scholarship financed by Sida, Swedish International Development Cooperation Agency. The scholarship made this study possible to carry through. According to the organization home page, “Sida works as according to the Swedish Parliament and Government to reduce poverty in the world.”

We spent nine weeks in total, from the end of January to the end of March 2011, in the city of Dar es Salaam. During that time we collected data for our study, made field trips to different areas and tried to get to know the city and to get an idea of people’s daily lives there. Dr Mrema was our local supervisor in Dar es Salaam.

The project was then put together in Sweden in the spring of 2011.

## 1.1 BACKGROUND TO STUDY – WHY IS IT OF RELEVANCE?

Dar es Salaam (‘Haven of peace’) is the biggest city in Tanzania and is located by the eastern coast of the country.

The city has approximately three million inhabitants, of which many are living in informal settlements. The population in Dar es Salaam is increasing rapidly and has doubled from 1,5 million to 3 million in 20 years.

In many cities in developing countries, green areas are decreasing due to the fact that the growth of buildings, infrastructure and services has become a priority (Mng’ong’o 2005:4). The

lack of finance and resources is a restriction to the capacity to carry out physical planning. When the population increases more buildings and infrastructure are needed, and as a result much of the building activity takes the form of uncontrolled settlements. Green spaces are considered to be less important than buildings and infrastructure, and therefore becomes a second priority (Bulamile 2009:21).

However, green areas are very important for a healthy urban environment, especially in developing countries where the building structure may be dense and large amounts of people live in overpopulated areas. Green areas in cities promote a healthy environment both from an ecological, social and economic perspective (Mng’ong’o 2005:5).

Therefore, the decrease in green space areas is a serious problem to the city of Dar es Salaam. The green spaces and the potential green spaces in the city are continually “eaten up” by both planned settlements and uncontrolled settlements, where the infrastructure is not in place. Problems with aspects such as waste disposal, storm water treatment and fresh water supply are very common.

## 1.2 ONE SITE, MANY PROBLEMS

Close to the city centre of Dar Salaam there is a big piece of land between Ilala and Kinondoni Municipalities, adjacent to areas of informal settlements and dense building structures. The area is a long strip, which is basically the Msimbazi River basin leading to the Indian Ocean. This area, which is approximately one kilometre wide and five kilometres long, is constantly under risk of continuous flooding and is therefore not suitable as a building site. The site has become a no man’s land with an undefined purpose concerning its usage. According to Dr. Mrema the area has become a serious issue for the city since it has turned into an unsafe environment of crime, waste disposal and a breeding place for malaria mosquitoes. This may in the near future become a health hazard to the people in the city. The authorities currently have no plan for the development of the area.

The area has a great potential of becoming a green park and recreational area that would benefit the population socially as well as health wise and it would also contribute to an improved



ecology in the city. If the area would become a planned area the issues defining the use of the site would be taken care of and even the site-specific problems would be resolved.

The study has resulted in a design proposal for the site, something to feed into an ongoing, urgent discussion on planning and public spaces in Dar es Salaam.

### 1.3 LIMITATIONS

The guidelines for the project were presented by Dr Mrema, and were overall very general: To study and plan the Msimbazi river basin in Dar es Salaam. We were introduced to the different site specific problems and from that information we formed a program for the design proposal. In order to solve the site's major problems well, we have accepted that we won't be able to solve all of the specific problems.

We have chosen to design two areas in detail and to show the rest of the park in a more general and conceptual design.

### 1.4 AIM

The quickly disappearing areas of green space in Dar es Salaam and the problems in the Msimbazi river basin area are the issues that have been examined in this study.

The aim is to make a design proposal for a park and recreation area where the Msimbazi river basin is today.

In order to carry out a design proposal from the study in the field, we have to do the following:

- Make a general survey and analysis of the entire city of Dar es Salaam, focusing on the green public spaces, also including how they have developed over time.
- Examine the specific site conditions in detail with the help of inventory and landscape analysis methods.
- Study the water flow through the area during different periods of the year. Flooding has to be prevented and the water could be used as an element in the design.
- Gain an understanding of the social and cultural life in Dar es Salaam. This is in order to develop a design proposal that is tailored to the citizens' lives,

interests and culture.

- Study plant conditions and the use of materials in the area.

### 1.5 QUESTION AT ISSUE

The main question for this study is: How could the Msimbazi river basin, with a new design, be turned into a public park and recreational area and what features would it need to contain?

For this question to be answered we have formed some sub-questions:

- Are the people in Dar es Salaam in need of a big public park and if so, who would use it?
- Is it physical possible, with all the site specific problems, to transform the Msimbazi river basin into a public park?
- Could some social difficulties, such as crime and segregation, be reduced with a new park?



Street in Kariakoo, close to the Msimbazi river basin.





View from Mount Kilimanjaro.

# METHODS

This chapter describes the methods we used and why we chose to use them. The descriptions of the different methods are organized in the same order as they later appear in the essay.

Our design process began with gathering information about the site and the issues that we had to deal with. This was followed by a site survey, analysis and finally sketching to develop a proposal. However this was not a linear process and as our work progressed we realized what pieces were missing and had to reverse our steps before moving forward. We started sketching on different solutions early, as we found this to be a good way to see what we lacked in our survey and analysis. We worked in different scales dealing with:

- Solving the individual problems within the park.
- Connecting the areas and the solutions in the park and making it coherent.
- Connecting it to the surrounding areas.
- Making sure that the park filled a purpose and became a vital part of the city.

Our first design proposals had perhaps only a few of these components. So after making each proposal we had to restart the process taking with us what we already knew and adding more information or making a new analysis of something we missed. For each time we did this we came closer and closer to a more realistic and well thought through proposal. .

## 1.6 BACKGROUND

This part is based on literature studies and observations. To put the site into a context and to get a better understanding of the problems and the conditions that exists there, and why they exist, we needed to find more information on the subjects that are listed below. The problems and conditions are not necessarily site-specific, they are often general for Dar es Salaam and Tanzania, but they are also found in the Msimbazi river basin. The main part of the literature that was used were doctorate theses, either suggested by our supervisors or found in a university library. Some terms that were used in the search for literature were “urban development” and “browning” and social issues such as “crime”, “gender” and “segregation” and

physical aspects as “climate”, “plant materials” and “floods”.

The development of Dar es Salaam  
The city plan and literature were studied to find out how the city had developed over time and which ideas there had been when planning it. By knowing this we could decide how or if we should incorporate the city plan when making our proposal.

Green space and public places  
By studying city maps, literature and traveling around in Dar es Salaam an understanding was gained of which public areas there where and which were needed. This included not only what kind of open spaces there where but also what they were used for and who they were used by.

Informal settlements  
Information about the informal settlements was gained by reading literature, looking at maps and by making observations. Some issues that were considered were why the informal settlements have developed, who lived there and why they lived there. By knowing this it is easier to decide if the settlements should be kept or removed or which parts should be removed and why.

Crime  
A study on how high the crime level is in Dar es Salaam, why this is, what kind of crimes that were committed and which areas that were considered more or less safe. This study was made by reading literature and it was done in order to generate ideas on how to make the area safer.

Waste management and pollution.  
The issues of waste management and why the site was so heavily polluted were analyzed by reading relevant information and making on-site observations. This information was necessary to see if these issues could be improved within the area.

Climate  
Any outdoor space is always affected by the climate, and it is an important aspect to consider in any park proposal. The climate was studied by examining climate maps and tables and by reading literature.



#### Malaria

Reading about the habitat of malaria mosquitoes and where these habitats existed within the Msimbazi river basin was needed in order to reduce the number of mosquitoes within the area.

#### Sustainability

This study was made by reading literature, both on sustainability in general and sustainability applied in African communities, gave an insight to what needed to be done in order to make the Msimbazi river basin as sustainable as possible.

#### Urban farming

Knowledge about how urban farming could be used as an element in the city, which benefits there are to it and who the user would be, was gathered by reading literature. This was necessary to see if urban farming was something that could be useful in Dar es Salaam and if it could be incorporated into the park proposal.

#### Plant materials

Which plant materials that were growing in the area were studied by reading books on the subject and by making observations. The gathered information was used to get an understanding of if there were any environments and ecosystems that were important to preserve, and what kind of plants that could be good to use.

#### Flooding

The site gets flooded annually, so it was vital to know how much of the area that gets flooded, why this happens annually and how it affects the area. Based on this a decision could be made on how to deal with the large amounts of water that affects the area several months per year. This was section were based on studying literature and maps.

#### Polluted water areas

Finding out how much polluted water there were within the area, where it originated from and how it affected the area was vital to know in order to see if the area could be cleared from it. This information was gained by reading reports and making on-site observations.

## 1.7 SITE SURVEY

The survey and analysis was made on two levels, the entire site with surroundings and the two areas that were designed in detail. The surveys were based on maps, on-site observations and conversations. Conversations were used rather than interviews to give people an opportunity to have an open and relaxed mind when they communicated.

#### Informal settlements

Different areas of informal settlements were located and the characters of the different areas were examined by reading and making on-site observations. As informal settlements are surrounding the Msimbazi basin and expanding into it, we needed to get a better understanding of them to make decisions like if we should remove any of them or just let them be. We also needed to gain an understanding of them to see how the park could be linked to them.

#### Flooding

To learn which parts and how frequently these parts get flooded, was essential to see if the water could be controlled and if so how it could be controlled. This information was acquired by studying maps and tables.

#### Land use and density

A site survey of what the area was used for today was made by making observations and communicating with people in Dar es Salaam. The current use of the space could in some cases indicate what the people wanted to use the site for, but it could also highlight existing problems. Through this decisions could be made on which existing activities could be developed further and which areas needed to be redeveloped completely.

#### Infrastructure and traffic load

By making observations at different times of the day an understanding was gained of where there was much traffic and how it affected the area and the movement of pedestrians. Through this, conclusions could be made on which places that needed to become more accessible and which places that already had many visitors, could be intensified further.

#### Green areas on site

The vegetation was studied on site and on maps. We looked at



*The outflow of the Msimbazi river to the Indian ocean.*





Market stand along a street in Dar es Salaam.

what the vegetation consisted of, the quantity of it and how it connected to other green areas in the city. In order to make the site ecologically and economically sustainable it was important to make use of the existing plant material. By knowing what grows there today it was easier to predict what other plants that were likely to successfully grow there in the future. There are also some urban farming plots in the Msimbazi river valley, locating them and finding out what they were growing gave an idea of how this activity is working today. This could help if planning new areas for urban farming.

## 1.8 ANALYSIS

### Stakeholders

A list was made of who could be considered to be likely stakeholders. The list was based on reading literature, looking at what is in the close proximity, observing how the area is used today and talking to citizens. Identifying the possible user groups could indicate what the park could or should be used for.

### Spatial analysis

The analysis describes the spatial attributes of the different areas in the park, for example if they opened up to the surrounding areas or if they were closed in. The spatial qualities were analyzed while on site. It included how open or closed the different parts were and how they were linked to each other and to the surrounding areas. This could give information of which areas needed to be linked better together and where more spatial structure was needed.

### Climate analysis

The climate analysis was based on where there was sun, shade and which areas that were the most effected by the wind. The analysis was made by studying maps and by making observations and it was used to determine which areas needed more or less shade and where the wind flow could be used as a cooling effect.

### Structural analysis

This is an analysis based on the Lynch analysis and the concepts node, district, landmark, path and edge from Lynch has been used (Lynch 1960). The analysis provides information about how an area is structured, where people move in the area

and why. On site, nodes, districts, landmarks, paths and edges were identified and combined to create a spatial analysis. The analysis showed how the area was divided and where and how people moved. This gave information about which parts that were difficult or easy to move in and which parts that needed to be linked together.

### SWOT

This is a list of strengths, weaknesses, opportunities and threats. It summarizes the survey and analysis and indicates what to consider when planning the future for the area. The result was based on literature studies, observations and talking to citizens. A SWOT analysis could emphasize what is already known, what could be improved and what problems that needs to be solved.

### Safety

A safety analysis indicates which parts of an area that are either more or less safe or considered to be more or less safe. It was based on reading literature, talking to some of the citizens and by personal observations. The analysis shows where most of the crime in the area occurred and which areas that were experienced as the most unsafe. This created an awareness of which areas that needed to become less threatening in order for the park to be well visited.

Which qualities that made an area appear safer was made clear by analyzing the appearance of the safer areas. This could be very useful when trying to create a park with less crime.

## 1.9 DESIGN PROCESS

### Case studies

Three different parks were studied. All parks had similar problems to those of the site and they have been redeveloped into well visited parks. By analyzing the designs of other successfully redeveloped parks and reading about what the landscape architects that created them wanted to achieve, ideas could be generated on how to solve the issues with our site.

### Sketch process

Based on the survey and analysis a program and a concept were made. Alongside this we started sketching on different solutions and ideas. The process started in Dar es Salaam, there the focus was mainly on finding solutions to the site-



specific problems. Starting to think about the design as soon as possible was important since getting inspiration from the site, local culture and people of Tanzania was vital for the outcome of the project. Back in Sweden the focus was more on the design and the expression of the park. The sketching was carried out both one by one and as a team. First in a team sketching the general ideas, and then one by one drawing up the ideas more in detail before meeting again to discuss the ideas and continue sketching.

#### Brain storming

Working as a team meant exchanging ideas and generating ideas together. Throughout the process we tried to discuss problems, methods, develop ideas and generate solutions as much as possible together. By working together we could add to each other's ideas and develop them further. When working together it was also easier to discover faults in ideas or missing logic in reasons that can be easy to miss when working alone.



*Tree providing shade at the Ahrdi University in Dar es Salaam.*





## 2. BACKGROUND





Landscape in northern Tanzania.

# BACKGROUND



To be able to make a design proposal, background information about Tanzania and the site was needed. This chapter describes the city of Dar es Salaam and some of the site specific issues.

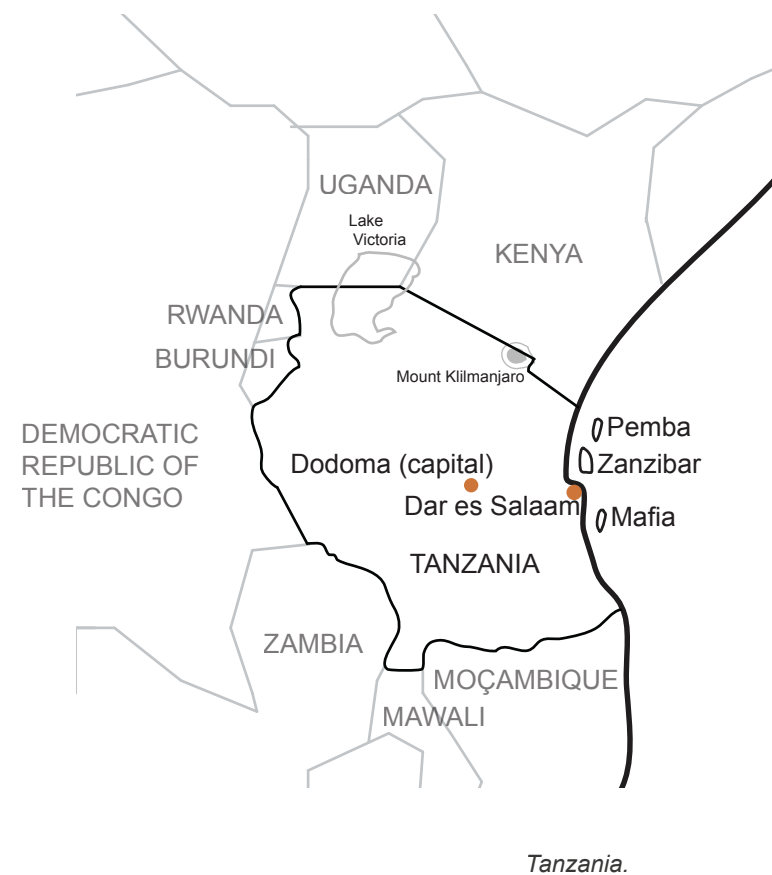
## 2.1 TANZANIA AND THE CITY OF DAR ES SALAAM

Tanzania is located by the eastern cost of Africa and include the off shore islands of Zanzibar, Pemba and Mafia. The country boarders to eight countries: Kenya, Uganda, Rwanda, Burundi, Democratic Republic of the Congo, Zambia, Mawali and Moçambique. Mount Kilimanjaro, Africa's highest mountain, is located in the north east of the country and the big Lake Victoria in the north west. Because of the country's variation in topography it contains wide spectra of vegetation types and has a rich wildlife (Heale.J 1998:7).

Dar es Salaam is located in the eastern part of Tanzania along the Indian Ocean coastline. The built city is bounded by the Indian Ocean to the east and the Pugu Hills to the west.

The Pugu hills contain the sources of many rivers that flows through the urbanized landscape of the city out to the Indian Ocean (Kimaryo .J 1997:82). The city is connected to the national highway by some main roads and they are further connected by roads with less traffic. The city has an international harbour and airport.

Dar es Salaam mostly consists of low-rise houses and the city structure varies from a grid pattern to a more organically formed pattern. The city has grown over time and therefore many areas differ in character depending on which period they are from. As Dar es Salaam has developed organically over time, orientating in the city is difficult. The city centre is very dense with few open spaces and has a hectic atmosphere with a lot of people, market stands and traffic. The city lacks green public spaces and in the city centre there are hardly any green areas at all. The air is polluted from the heavy traffic and the process of burning garbage.





## 2.2 THE DEVELOPMENT OF DAR ES SALAAM

Dar es Salaam was founded in the 1860s by Sultan Majid bin Said of Zanzibar. In the 1880s the city became German territory and the Germans developed it into the commercial city and port city of Tanzania (Bulamile 2009:13). A master plan for the city was developed, which divided the city into three different areas, zone I, II and III. The new plan created a segregated city. The commanding colonizers separated themselves from the rest of the city residents, by doing this they could physically and ideologically dominate over the ruled population (Bulamile 2009:15).

Zone I was located along the harbor front and the eastern part of the city. This part was for European settlers only and the houses there had to be built in a European style. This area had wide and straight boulevards and the plots were usually quite big, often with two stories buildings. This was the largest of the three zones but with the fewest inhabitants. Later this area was extended to include Oyster Bay and Masaki (Bulamile 2009:15).

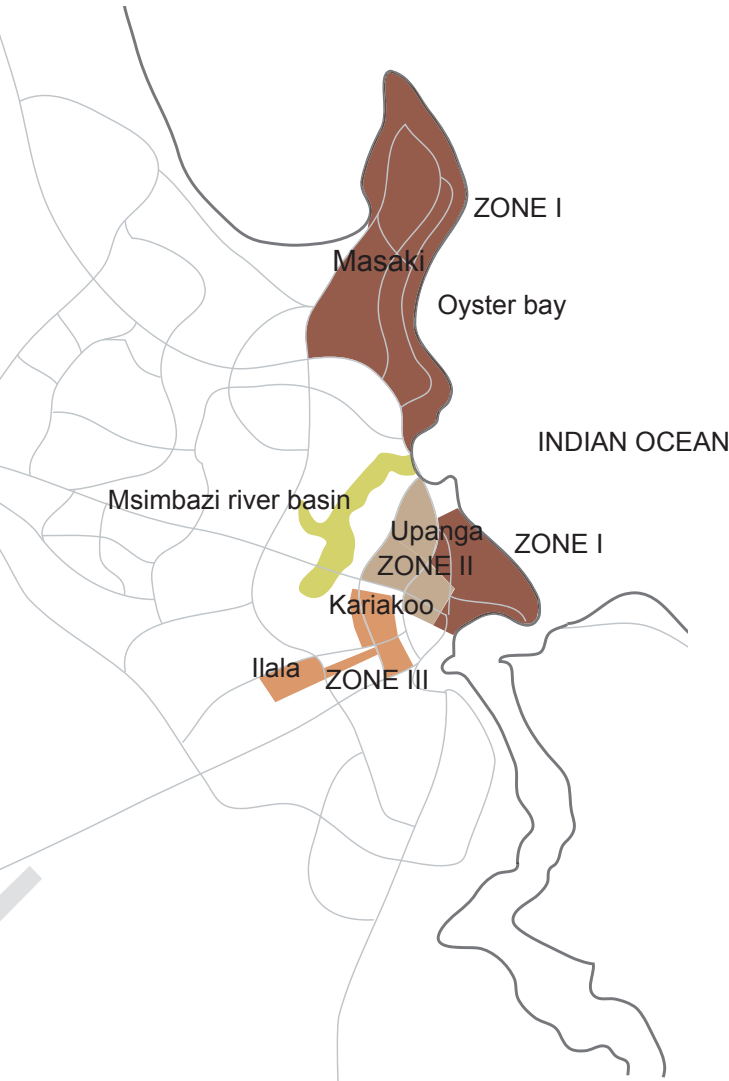
Zone II consisted of the central part of town, including Upanga, and was laid out in a gridiron pattern plan (Bulamile 2009:15). This area was allocated to Asians, most of them from India. The area was much more densely built than Zone I and buildings other than European ones were allowed there as long as they were made of solid materials and could not fall into the category of native huts.

Kariakoo was defined as Zone III and was for native Africans. All building types were allowed there, including native huts. This area was composed of a similar gridiron pattern plan to that of Zone II, but with much smaller plots. In the 1930's the zone was enlarged to also include Ilala. Another part of the segregated planning was a greenbelt that was left between zone II and zone III. This belt served as a buffer and native Africans had to walk through this belt in order to reach the city centre (Bulamile 2009:15).

The British took over the city in 1919, and continued to use segregation within planning. The segregation continued until the independence of Tanzania in 1961 (Bulamile 2009:15). But even after this the character and the land use of the different

areas has not changed much, and the three different profiles were still used when planning new areas. In Dar es Salaam after the independence. The characteristics of zone I were used when planning areas for high-income dwellers, zone II for medium-income dwellers and zone III for low-income dwellers (Bulamile 2009:16).

Dar es Salaam has grown a great deal in the last 30 years. The local authorities have tried to keep up with the demand for housing throughout the years, but failed. This has resulted in large areas of informal settlements all over the city. In the 1980's and 1990's there were some socio-economic and political changes that resulted in a lot of people migrating to Dar es Salaam. In 1988 there were 1.36 million inhabitants, today there are about 3 million people living in the city (Bulamile 2009:22). This has led to a denser city center as well as more unemployment, crime and violence (Bulamile 2009:23).



Map showing the location of the different zones I, II and III.

Bild saknas pga upphovsrättsliga skäl. För komplett arbete med bilder kontakta SLU Ultuna.

Wide avenue with low rise buildings in former Zone I.

Bild saknas pga upphovsrättsliga skäl. För komplett arbete med bilder kontakta SLU Ultuna.

Densely built Upanga, with a majority of Indian inhabitants, in former Zone II.



Kariakoo, in a gridiron pattern plan, part of former Zone III.





## 2.3 GREEN SPACE AND PUBLIC PLACES

The element of urban green public spaces and structure is of importance to all cities in the world, both in developed and in developing countries. Green areas in cities contribute to a healthy environment, both from an ecological, social and economic perspective. A developed green structure benefits the city in many ways as it connects green areas with each other and also link green areas to the natural surroundings outside of the city (Mng'ong'o 2005:5).

Urban green spaces and developed green structure contribute directly to:

- reducing noise and air pollution
- controlling temperature and improving overall climate conditions
- contributing to the balance of hydrological systems
- stabilizing soil
- providing space for recreation and relaxation
- providing biodiversity in the city
- Provides the city with a aesthetic value (Mng'ong'o 2005:5)

In Dar es Salaam green areas provide the city with all of the above qualities but the most important ones would be the reduction of noise and air pollution, the improvement of the local climate, the improvement of the city's ecology and creating places for social activities. The linkage between the green areas in the city is poor today.

The social benefits from green areas and public spaces are also important to the citizens' daily lives. Green areas in cities can be used in many ways by the city dwellers, for example they can contain different social activities like children's playgrounds, local festivals and other social events. Green areas also serve an educational purpose for the citizens by letting them know their home environment and how it changes according to season. They also become places where all kinds of people can interact and thereby enhances the social justice in the cities (Mng'ong'o 2005:4).

In Dar es Salaam and in many other cities in developing countries, green areas are browning out, due to the fact that the increase of buildings, infrastructure and services has become a

priority (Mng'ong'o 2005:4). Since the physical planning is restricted by the lack of finance and resources, the urban spaces in the city are not really adjusted to the citizens needs and daily lives.

Dar es Salaam is no exception to this occurrence and the green areas are quickly disappearing because of population growth, physical densification and poor planning.

The Mzimbaasi river valley, which is a natural heritage, is one example of green land in the city that is frequently reduced at the benefit of the physical development.

The government is aware of the problem in the city and some small re-greening projects have been completed in the city but the developing pace is slow and the organization is difficult (Mng'ong'o 2005:106).

The urban spaces in Dar es Salaam are well used, but not in the purpose the city is planned for. One of the problems with the use of urban space in the city is the occurrence of small scale commercial activities that take place in the streets and the few open spaces. The commercial activities consist of people selling clothes, food, wood carvings etc. According to Jacob L. Kimaryo (1996:116) and noticed through our own observations, this type of business is seen in all types of urban spaces in Dar es Salaam. The commercial business takes up a lot of space which makes the pavements narrow, blocking the natural movement pattern which leads to lack of space and difficulties to move and orientate in the city. In some places the stands are even blocking entrances and windows (Kimaryo 1996:130).

The few green areas that exist in the city are used for resting in shade, doing sports if the space is big enough and doing daily activities like washing up and doing laundry.

## 2.4 INFORMAL SETTLEMENTS

Most people living in the countryside in African countries are dependent on agricultural productivity to make a living. These people are constantly challenged by drought, controlled price of crops and local conflicts. Many people living in the countryside escape to the cities in hope for a better life and this migration becomes a problem to the cities that can't keep up with the demand of housing and employment opportunities. The population in Dar es Salaam is increasing rapidly and in order to be able to stay in the cities people seek alternative solutions in terms of work and shelter and these solutions don't



always correspond with the existing planning regulations. Like in many African cities, this is how the areas of informal settlements have grown in Dar es Salaam (Limbumba Mtwangi 2010:18).

In Dar es Salaam about 70 percent of the inhabitants are living in informal settlements. Informal settlement means that people build their houses on their own without contact or permission from the authorities (Limbumba Mtwangi 2010:18). Without any regulations, this occupied land has developed in to dense building structures with bad connections to the infrastructure of the city. The area's lack of organized waste management and connections to the local sewage system, leads to health issues for the people living there and also for households in the neighboring districts (Limbumba Mtwangi 2010:18).

In 1997 there were approximately 91000 people living in informal settlements in the Msimbazi river valley and since then the number has increased. There are also a number of informal industries located there, such as a textile factory, automobile spares, food processing, timber works and other light industries (Ngware 2003:11).

A building plot in the valley can be bought from a local leader. The process of buying a plot takes only a few days and is a lot cheaper than acquiring a plot from the government, which you have to wait years to get (Ngware 2003:17). It is also cheaper to build there than in other parts of the city since both the building materials and the labour cost less. To build in the area can also be considered a good investment, houses or rooms are easily rented out since the area is so close to the city centre and there is a shortage of accommodation in Dar es Salaam (Ngware 2003:41).

The area gets flooded every year for a few months and this occasion is threatening for the people living in the informal settlements since it can result in the loss of property as well as the loss of lives (Ngware 2003:10). Despite of this problem there are still a lot of people choosing to live there. The major reasons why people choose to settle down in the valley are the closeness to the city centre and fertile soils for gardening. Being close to the centre provides employment opportunities and it also means that the inhabitants don't have to pay for trans-

port in order to get to work. The area is also close to health services, since the Muhimbili National Hospital borders on the area (Ngware 2003:11).

During the annual rain season the area is under constant risk of being flooded. At the beginning of the season the inhabitants prepare themselves by storing clothes, mattresses and some utensils up on a cupboard or tied to a beam (Ngware 2003:54). The residents also constantly monitor the water levels, when the water start to rise they first evacuate old, sick and children to higher areas. They are followed by women who carry some belongings with them. The men go last, but they don't go far as they have to make sure that their homes don't get burgled during the floods (Ngware 2003:45). The floods usually only lasts for a few hours and when the water starts to decrease the people return to start to clean up their homes. Usually the water rises to about a meter above the ground. On rare occasions, such as during el-nino, the water can raise to about two meters above the ground (Ngware 2003:46). According to the residents the flooding is a short-lived problem which lasts only a few months while the rest of the year they live a normal life (Ngware 2003:56).

## 2.5 CRIME

Crime has been increasing in Dar es Salaam ever since the first world war (Bulamile 2009:23). The population today mostly consists of low income citizens living in informal settlements. Of these citizens many are unemployed or are doing unproductive informal or petty business. The inhabitants in these communities have low respect for the law (Bulamile 2009:24). There are two local terms demonstrating this; One is Bongo which is used to explain the struggle for survival in Dar es Salaam, it means that "for one to survive in the city, one has to use brain". The other is Ruksaland which means "everything allowed for survival". Because of poverty and hard living conditions different types of crime are common in the city. The more common types of crime are robberies, burglaries, mugging, swindling, cheating, thieving, corruption or bribery, drug abuse and alcoholism and prostitution (Bulamile 2009:25).

The increase of crime can be explained by the following: socio-economic explanations, unemployment, conspicuous and lib-



*Area with informal settlements close to the Msimbazi river basin.*





Garbage dump in the Msimbazi river basin.

eral consumption habits, squalor and disorderly homes, moral degeneration, traditional healers and/or witchcraft, and limitation of law enforcement agencies and corruption in system (Bulamile 2009:24).

The socio-economic problems are easy to see in and around the Msimbazi river basin. The level of income in different areas is very varied. From homeless people living in the river basin, to the people in the informal settlements and the people living in expensive residential areas as Upanga.

According to Dr. Mrema the Msimbazi valley has become a serious issue for the city since it has turned into an unsafe environment of crime. On demand of the city's residents a police station has been located close to the playing fields in hope to make the area safer. The area with mangrove forests is still seen as a dangerous and inaccessible area.

The bridge on Bagamoyo road that crosses the river by the ocean is another unsafe area that has earlier been a target for terrorists that attempted to bomb it. The bridge is today well-guarded and it is forbidden to take photographs there.

## 2.6 WASTE MANAGEMENT AND POLLUTION

Waste management is a large problem in Dar es Salaam. Dar es Salaam city generates approximately 2,4 tons of garbage each day but only about 40% of it reaches the dumping grounds (Ngware 2003:4). The city has no functioning waste disposal system which shows with a lot of waste lying in ditches along the roads and in water streams. A lot of the inhabitants feel that the cost of waste collecting is too high and are used to an on-site treatment (Ngware 2003:50). The most common way to dispose of garbage is to simply burn it and in many places in the city these fires occur. This causes air pollutions and a near constant haze over the city (Mgana 2009:14).

There is a lot of waste being dumped and burned in the Msimbazi river valley today. This is probably since it is an open area with no defined function. Solid waste collection is very difficult in the informal settlements surrounding the area due to the lack of roads and with the people living there being very poor. The poor sanitation in the area leads to diseases, such as typhoid fever, fungus, dysentery and cholera (Ngware 2003:51).

## 2.7 CLIMATE

Dar es Salaam is located close to the equator and the climate is hot and humid throughout the year with an annual average temperature of 29° C and a humidity of 96% in the mornings. The coolest period is after the main rain season in June to September (Mgana 2009:8). The annual rainfall is 1000 mm and the amount of rain that could fall in a short period of time is highly affecting river streams and creates land erosion. Because of the closeness to the equator the sunlight is intense and makes the city's environments very hot during the day (Mgana 2009:8).

## 2.8 MALARIA

Malaria is a serious health problem in the tropical and sub-tropical areas in Africa. The disease is transmitted by malaria mosquitoes and is concentrated to the areas where the mosquitoes find appropriate breeding places (Smittskyddsinstitutet).

Parts of the Mzimbazi river basin are today breeding places for Malaria mosquitoes. Many people in Dar es Salaam get sick every year and this is a serious problem and a health hazard to the city residents (Smittskyddsinstitutet).

## 2.9 SUSTAINABILITY

According to the Bruntlandrapport, published by the United Nations, sustainable development is defined as: "Sustainable development meets the needs today without compromising future generations to meet their needs." (SOU 2004:32).

To plan and build with sustainable guidelines has become more and more important all over the world. Sustainable development, social, economic and ecological, is important especially for developing countries since they often don't have time to keep up their production, planning strategies and energy supply with the growing population (Mng'ong'o 2005:115).

Dar es Salaam is today characterized by a low-density environment even if the city centre is overpopulated. The density of people differs when looking at the city centre and the outskirts of the city, with the inner city having a density of about 221 persons per km<sup>2</sup> and the outskirts 21 persons per km<sup>2</sup> (Mng'ong'o 2005:115). This is not good from a sustainable building perspective where the lack of exploitable land in



the city centre raises the prices, which only makes it accessible for people with money. The alternative for people that cannot afford a building plot results in informal settlements in the few not exploited areas existing in the city (Johansson. Råsmark. 2006:36). The local transport alternatives are expensive for many city dwellers so it is important to live close to your work or daily activities. The density is not the only problem to be solved in terms of sustainability, the lack of organized planning, green areas that are browning out and pollutions, are other issues the city needs to improve in the future.

## 2.10 URBAN FARMING

Urban farming is defined as urban space used for agricultural purposes. This type of farming is not a new phenomenon in this part of Africa and it is today mostly carried out by the city's low-income citizens. Producing food, plants and possibly timber locally, can bring many advantages to the city dwellers.

The advantages with urban farming are:

- Strengthen the community spirit
- Give people the possibility to effect their ambient environment
- Integration
- Provide an educational purpose by showing the circular flow in nature
- Increased biodiversity in the city
- Stabilizes landforms
- Better city climate and less polluted air
- Less transports
- The possibility to self providing food
- The possibility to occupation and small entrepreneurship (Asp 2009:7)

In Dar es Salaam urban farming is common in the river valleys like Msimbazi because of the availability of irrigation water. The crops that are grown there today are: sweet potatoes, cassava, paddy rice vegetables, cowpeas, chick peas, pineapples, paw paws, oranges and other citrus fruits (Mgana 2009:16). Because of the chemical spill from nearby factories and the liquid waste from households, the vegetables grown in the Msimbazi valley could be heavily polluted (Ngware 2003:30).

Along some roads in Dar es Salaam you can find plants and nurseries of seedlings that are brought from individual informal farming and then sold to customers. These nurseries not only provide plants to the citizens, they also beautifies the streets and provide the city with more green material (Mng'ong'o 2005:104).

## 2.11 PLANT MATERIAL

The vegetation in Tanzania varies greatly, from arid bush land to rainforests. This is mainly due to the difference in water availability (Lind, E. 1974:xi). Around Dar es Salaam there are mostly bush lands that consist of different types of wooded plants, most with shrub habits. The shrubs usually don't get higher than 6 meters, but there are some higher trees growing among them (Lind, E. 1974:xvi and xv). The leaves come off the trees one time per year, but instead of shedding their leaves during the winter, they shed them during the driest months of the year (Lind, E. 1974:xv). A narrow area along the shore of Tanzania is characterized by coral vegetation, coconut trees and colourful trees and shrubs. The soil consists of deposits of coral and sand. This vegetation is affected by the heavy rainfall and the wind from the Indian Ocean. Some parts of the coast have mangrove swamps, for example the Msimbazi river basin (Lind, E. 1974:xi).

Mangroves are one of the world's most productive ecosystems. They are located between sea and land along tropical and subtropical shorelines and need a mix of salt water and fresh water to grow (Naturskyddsföreningen 2010). Mangroves are habitats to fish and other animals, and are used by man as a source for fuel wood, charcoal, fishing stakes, building material and traditional medicine (Mgana 2009:21). The intricate root system and densely growing branches of the mangroves protects the surrounding area against wind, waves and coastal erosion. When water is passing through the mangrove it is separated from sediment and pollutions before it reaches the sea (Naturskyddsföreningen 2010). The mangroves have begun to diminish simply because there is money to be made from the coastal areas. The shorelines are being cleared in order to make poles and establish salt productions, to create space for hotels and for sand extractions. Most of the tree-cutting is unregulated and is carried out without any permits. The removal of mangroves causes beach erosions, which affects the entire coastal ecology (Mgana 2009:21).



*Plants being sold along a street in Dar es Salaam.*





*Polluted ditch along the border of the Msimbazi river basin.*

For a long time it has been in fashion to bring in exotic plant materials for use in public places. This has become a problem since it often leads to extinction of indigenous plants species and even animal species (Kongjian 2006:10).

Some plant material that could be found in Dar es Salaam that are not used for farming purpose are Indian almond trees, Neem trees and lawns (Mng'ong'o 2005:115).

## 2.11 FLOODING

The main Rivers in Dar es Salaam City are Mpinji, Kizinga, Mzinga and Msimbazi. The rivers plays a significant part to the citizens of the city since they are used for bathing, irrigation for agricultural activities in the city, source of potable water and they convey surface runoff from the land (Ngware 2009:3).

The Msimbazi river flows from the Pugu Forest Reserves, through the city to the north of the city centre and discharges out into the Indian Ocean. The river runs about 35 km through the country and is the longest river in Dar es Salaam. The water flow differs throughout the year, as the river is perennial, which means that it comes back every year (Ngware 2009:19).

Dar es Salaam has two rain seasons and two dry seasons. The long rains fall from March to May and the lighter short rains fall from October to December.

The annual rainfalls in Dar es Salaam make the river fill up occasionally over the year (Ngware 2009:19).

The catchment area for Msimbazi River basin is approximately 300 square kilometres and since the area is close to sea level it rapidly gets flooded during the rainy seasons. Today a lot of people living in informal settlements in the area are highly affected by the continuous floods (Mgana, S. 2009:17).

The construction of houses in the area for the past 30 years obstructs the flow of water from reaching its proper destination and this has increased the uncontrolled floods. There is also a lot of vegetable growing and sand mining there, which adds to the soil erosion and the annual floods. There are drains within the area, but these often get clogged up by plastic bags and other waste being dumped on sight.

The flooding also increased after coastal industry levelled the ground for construction and when Msimbazi Bondeni resi-

dents blocked the river from diverging to their area (Ngware 2003:43).

The uncertainty of how the river level fluctuates could become a serious problem to both the people living in the area and to the citizens of Dar es Salaam generally. The rising sea level as a consequence from the global warming could also be considered as potential environmental hazard in this area (Mgana 2009:17).

## 2.12 POLLUTED WATER AREAS

The Msimbazi river is important to the city dwellers in many ways. Unfortunately the industries in the area pour unwanted end products from industries and human activities into the river which makes it highly contaminated. The river can thereby not be used as wished and at seasons with low or no water flow the concentration of the contamination rises and becomes a health hazard to the people.

The pollution of the river has the following origins:

- Industrial discharge. This comes from for example breweries, a textile factory, dairies, a paint factory, a farm implements factory and a power station (Mgana 2009:36).
- Oil pollution from petroleum hydrocarbons storage and transportation facilities (Mgana 2009:37).
- Discharges from water treatment plants, mainly from waste stabilisation ponds (Mgana 2009:38).
- Wastewater from the hospital, for example from the wards, operating theatres, laboratories and mortuary (Mgana 2009:38).
- Wastewater from the abattoir (Mgana 2009:38).
- Outfalls for stormwater drainage systems leads into the area, the stormwater is collected from industrial areas, residential areas, commercial areas, institutional areas, informal sector activity premises and also roadside drains (Mgana 2009:38).
- Leakage from the Vingunguti solid waste disposal site (Mgana 2009:38).
- Diffuse effluent discharges from on-sight sanitation systems, unsewered industrial areas, informal sector premises, stormwater from areas without drainage



systems, farmlands and animal grazing areas and from solid waste disposal sites (Mgana 2009:40).

## 2.13 SUMMARY WITH THE THREE MAIN QUESTIONS IN MIND

Are the people in Dar es Salaam in need of a big public park and if so, who would use it?

- Green areas in cities contribute to a healthy environment, both from an ecological, social and economic perspective.
- Dar es Salaam is growing fast, which is resulting in more informal settlements and less green space. In the city centre there are hardly any green areas.
- Green areas in cities can be used in many ways by the city dwellers, green spaces can for example contain children's playgrounds, local festivals and other social events. Green areas also have an educational purpose for the citizens by letting them know their home environment and how it changes according to season.
- Urban spaces in Dar es Salaam are well used, but not in the way that they were planned for. The most common way that open spaces are used is for small scale commercial activities. But they are also used or resting in shade, doing sports if the space is enough and doing daily activities like washing up and doing laundry.

Is it physical possible, with all the site specific problems, to transform the Msimbazi river basin into a public park?

- The water in the area is very polluted.
- There is a lot of waste being dumped and burned in the Msimbazi river valley today.
- The climate is very warm in Tanzania and there are two annual rain seasons during which the area gets flooded.

- Parts of the Mzimbaizi river basin is today a breeding place for malaria mosquitoes.
- The vegetation varies in Tanzania and at the site. It is important to keep as much as possible of the mangroves as they are in risk of becoming extinct.
- Only indigenous plants should be used to benefit the local ecosystem.

Could some social difficulties, such as crime and segregation, be reduced with a new park?

- Dar es Salaam was built to be segregated and continue being so today.
- Parks can become places where all kinds of people can interact and thereby enhance the social justice in the cities.
- Urban farming is mostly carried out by the city's low-income citizens. Producing food, plants and possibly timber locally, can bring many advantages to the city dwellers.
- The valley has become a serious issue for the city since it has turned into an unsafe environment of crime. On demand of the city's residents a police station has been located close to the playing fields in hope to make the area safer. The area with mangrove forests is still seen as a dangerous and inaccessible area.

### Generated questions:

What is the area used for today, and which parts are used for what?

What does the surrounding areas contain?

Which parts of the Msimbazi river basin are the most safe/unsafe and why?

Where are the informal settlements located and why?

What kind of vegetation exists there today how much of the different types are there?

Is there any difference in the local climate?

Which parts of the river basin gets flooded?



Street in Kariakoo.







# 3. SITE SURVEY







Grasslands in the Msimbazi river basin with the centre of Dar es Salaam in the background.



Playing fields with viaduct to help control the floods in the background.



Informal settlements that borders on to swamps in the Msimbazi river basin.



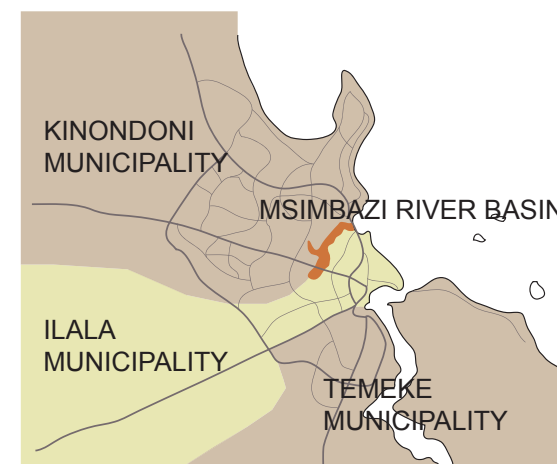
Mangroves and the Msimbazi river.

### 3.1 THE MSIMBAZI RIVER BASIN

The Msimbazi river basin is located close to the city centre of Dar es Salaam, between Ilala and Kinondoni Municipalities and it is leading out to the Indian Ocean. It is a large site that is roughly 1 km wide and 5 km long and is adjacent to areas of informal settlements and dense building blocks. The area is long and narrow and its environment changes from an open landscape to dense mangrove forests. It is one of the few green areas in Dar es Salaam.

The river basin separates different municipalities in the city and there are many important facilities that borders on to the area, for example the Muhimbili National Hospital, schools and a sport centre.

Since the area is constantly under risk of continuous flooding, it is not suitable as a building site. The area has therefore become a no man's land with an undefined purpose.



Map showing the different municipalities in Dar es Salaam.

**KIGOGO**  
Informal Settlement  
Ilala is an informal settlement area bordering to the area.

**KINONDONI**  
Residential area.

**MAGOMENI**  
Residential area, partly informal settlements along the edge of the area.

**INDIAN OCEAN**  
Mangrove forest  
School  
School  
School  
School

Muhimbili National Hospital

**UPANGA**  
Upanga is a Indian residential area located close to the hospital. The buildings consist of multi storey buildings.

**HANA NASIF**  
Informal Settlement  
Hana Nasif is an informal settlement area bordering to the site. The area has existed for a long time and is nowadays well established.

**KARIAKOO**  
Kariakoo is a dense area with a crowded market and busy shopping street. The building structure is in a iron grid pattern. Kariakoo is a part of the city centre.

**BUGURUNI**  
Informal Settlement  
Buguruni is an informal settlement area close to the area.

**ILALA**  
Informal Settlement  
Ilala is an informal settlement area partly bordering to the area.



3.2 INFORMAL SETTLEMENTS

Informal settlements are bordering most sides of the Msimbazi river basin. They are adding on to existing residential areas and spreading into the valley. Now there are so many informal houses that they cannot avoid getting flooded. Despite the floods people still choose to live there since it is a good location and affordable accommodation. The areas that are not being built on are those that are under water all year round, are used for daily activities, are too steep to build on, and are too inaccessible or too unsafe. Close to the playing fields there are two borders that seem to keep the informal buildings from spreading into the area, a ditch in the east towards Kariakoo and the Msimbazi river in the west. No one has built beyond these in this area.



Map with the informal settlement areas marked as red.

3.3 FLOODING

A large part of the Msimbazi river basin gets flooded during the rain seasons. The part of the site that is used the most, the area close to the Morogoro road, is also the part that gets flooded the least. The floods limit the movements in the area, paths get blocked by the body of water and some playing fields get under water. Since the water functions as a breeding ground for malaria mosquitoes, the number of mosquitoes increases a lot after the rains. The floods also create problems for the people living in the informal settlements there, they have to evacuate their homes and could lose properties as well as be in danger.



Map showing the areas that are annually flooded (light blue) ant the permanent Msimbaziriver (dark blue).





*The dense mangroves.*



*Grasslands.*

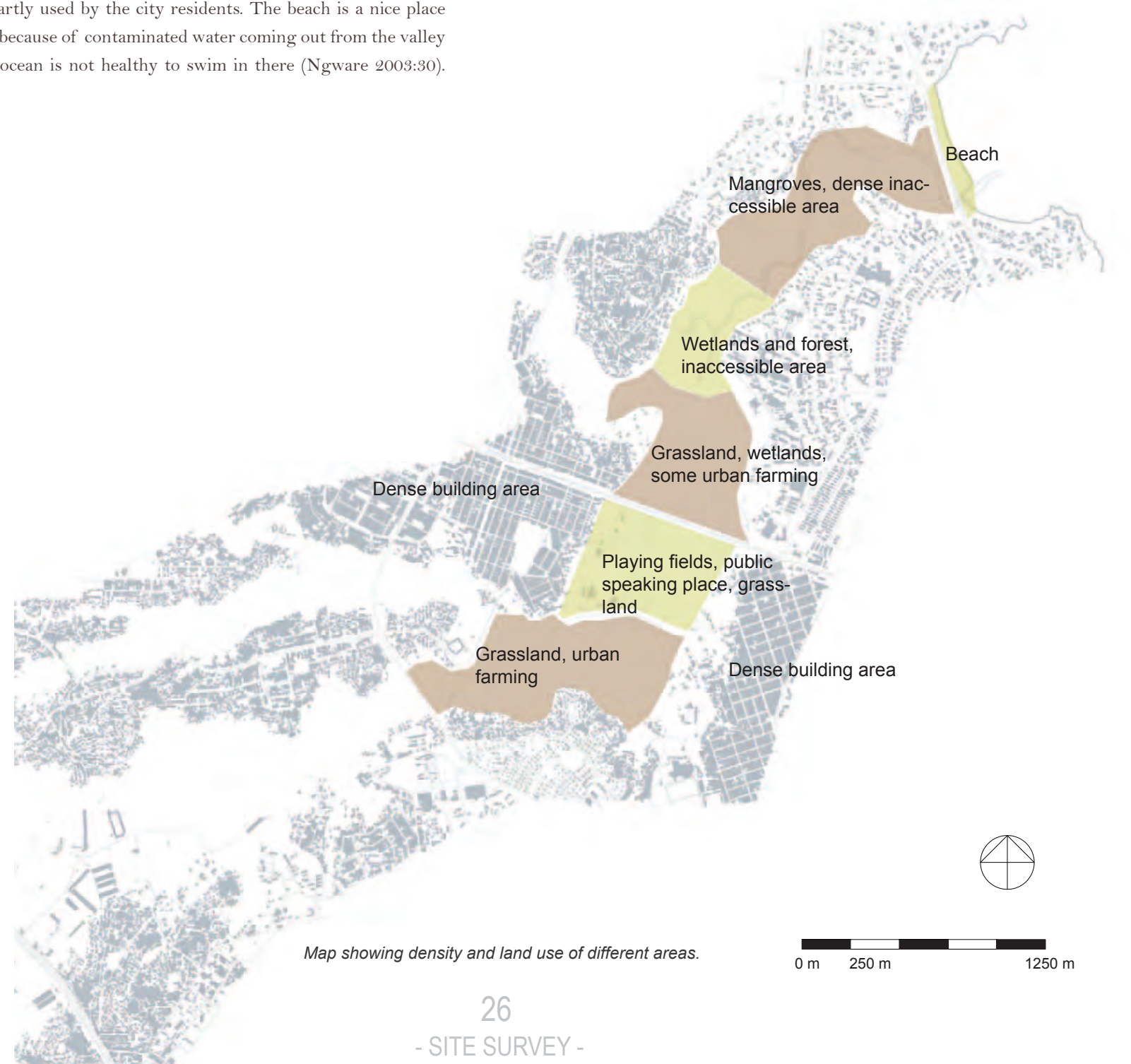


*The open playing fields.*

### 3.4 PRESENT USES OF THE AREA

The site is used as playing fields for sports, some urban farming and there are also some industries are located in the area. The playing fields are also occasionally used for public meetings. The areas that are not used for sports and farming consists of wet-land and mangrove forests.

In the northern part of the area, where the Msimbazi river basin is leading out to the Indian Ocean, there is a beach strip that is partly used by the city residents. The beach is a nice place but because of contaminated water coming out from the valley the ocean is not healthy to swim in there (Ngware 2003:30).



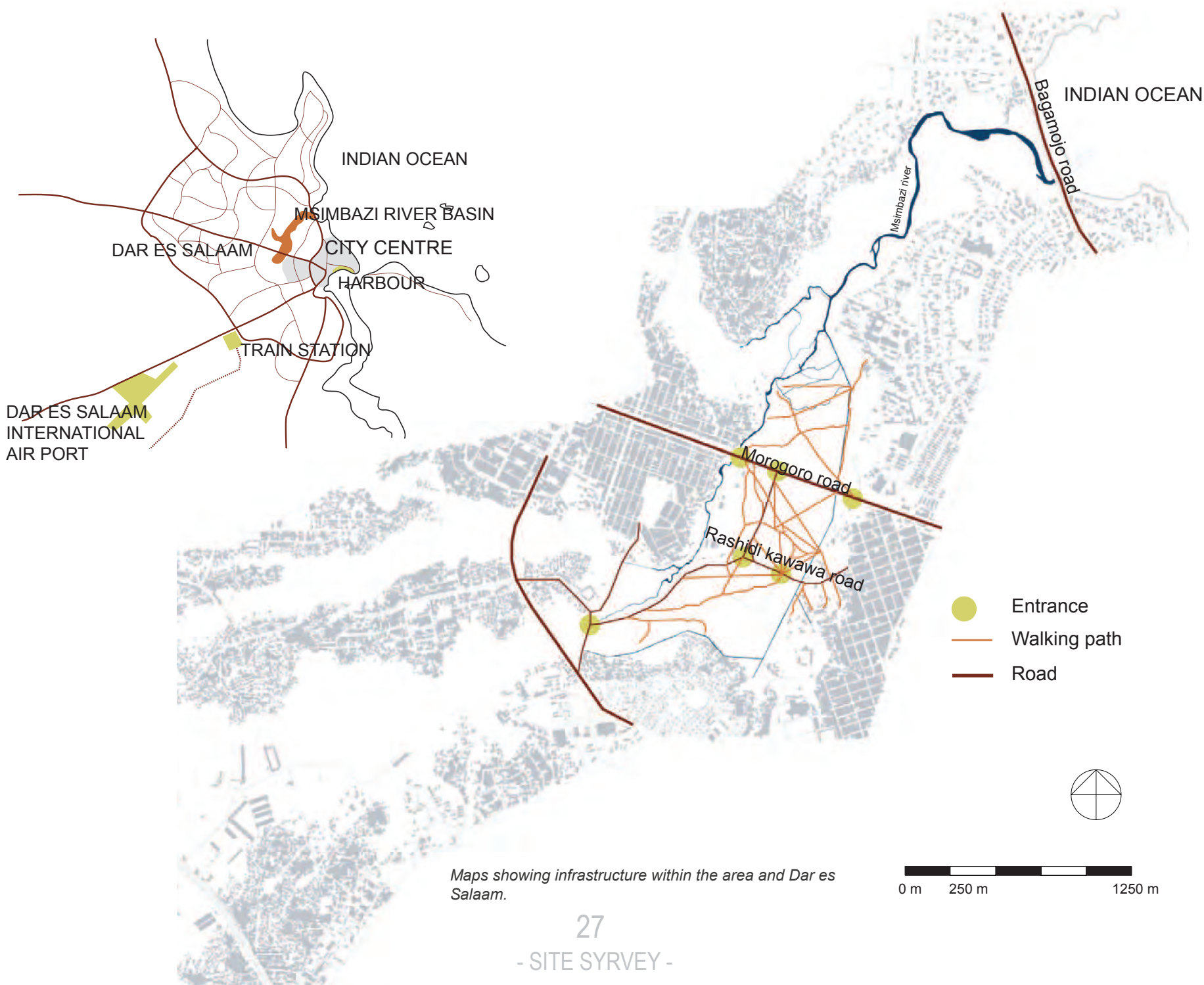


3.5 INFRASTRUCTURE AND TRAFFIC LOAD

There are four major roads running through Dar es Salaam, the Bagamoyo road, the Morogoro road, the Nelson Mandela road and the Nyerere road. Of these four, two pass through the site, the Bagamoyo road and the Morogoro road. There is also a third quite large road that is on the edge of the site, the Rashidi Kawawa road. Apart from the main roads of the city, most roads are either very narrow or not even paved. The

conditions of the smaller roads put a lot of pressure on the larger ones. There are several hours of traffic jam on these each morning and afternoon.

The walking patterns are following the main roads and in some areas the valley is crossed by pedestrians. The site has a few diffuse entrances and people are mainly entering the area from the paths along the main roads. There are some physical obstacles for pedestrians on the site such as the larger roads, ditches, walls, informal settlements and the Msimbazi river.



Heavy traffic on the Morongoro road.





Mangroves.



Grasslands and urban farms.

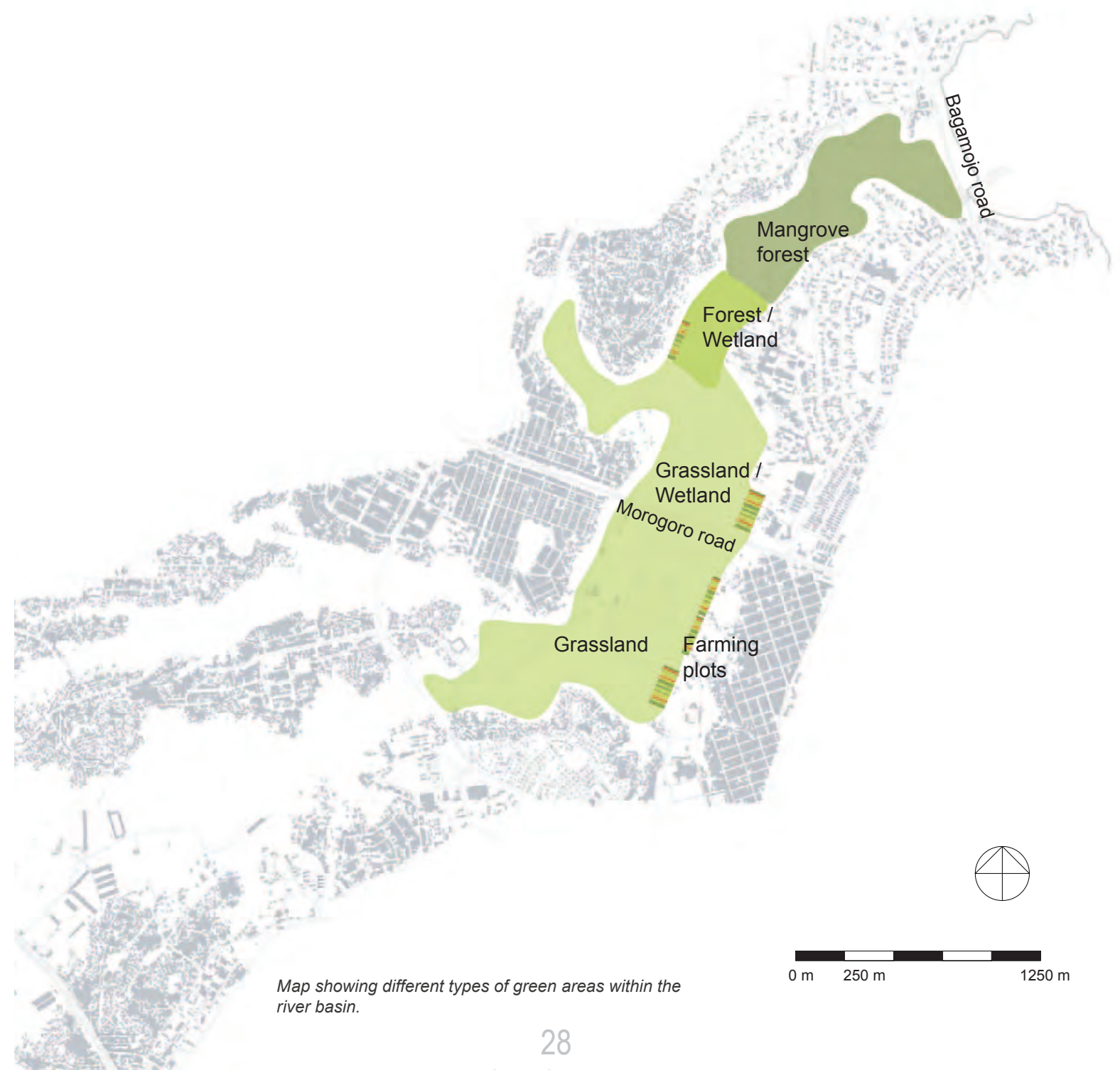


Wetlands.

### 3.6 GREEN AREAS ON SITE

The vegetation varies a lot in the area from open beach to mangroves, forest, swamps and grasslands. The vegetation highly affects the character, spatial structure, usage and the perceived level of criminality. The biggest difference is perhaps between the mangroves and the grasslands. The mangroves are very

dense and hardly ever visited. The grasslands on the other hand are very open and used frequently for activities such as sports. Most of these differences are a result of the vegetation growing there. Most of the vegetation within the area has developed naturally without anyone looking after it or taking care of it, but in some parts there is a bit of informal farming.



Map showing different types of green areas within the river basin.



### 3.7 SUMMARY WITH THE THREE MAIN QUESTIONS IN MIND

Are the people in Dar es Salaam in need of a big public park and if so, who would use it?

- The Msimbazi river basin is a no man's land with an undefined purpose. But the park has a lot of potential users since it is close to the city centre of Dar es Salaam, surrounded by densely populated areas of both formal areas and informal settlements. There are also several important facilities that borders on the area, for example the Muhimbili National Hospital, schools and a sport centre.
- The area is already used as a Park in some cases. It is for example used for playing sports, some urban farming and for public meetings.

Is it physical possible, with all the site specific problems, to transform the Msimbazi river basin into a public park?

- The vegetation varies a lot in the area, this effects the character, spacial structure, usage and the perceived level of criminality.
- There are some physical obstacles for pedestrian in the area, such as the larger roads, ditches, walls, informal settlements and the Msimbazi river.
- A large part of the Msimbazi river basin gets flooded during the rain seasons. The part of the site that is used the most is the part that gets flooded the least.
- The water functions as a breeding ground for malaria mosquitoes and the number of mosquitoes increases a lot after the rains.
- Informal settlements are bordering most sides of the Msimbazi river basin. Now there are so many informal houses that they can not avoid getting flooded. Despite the floods people still choose to live here since it is a good location and affordable accommodation.

- The site has no clear entrances and people are mainly entering the area from the paths along the main roads.

Could some social difficulties, such as crime and segregation, be improved with a new park?

- The floods creates problems for the people living in the informal settlements, they have to evacuate their homes and could loose properties as well as be in danger.
- The areas that are not used for sports and farming consists of wet-land and mangrove forests and are very dangerous areas both in terms of crime and health.

#### Generated questions:

How do people move through the area and why?

Who uses the area or could come to use it in the future?

How does the different parts of the Msimbazi river basin connect to each other?



Grasslands and playing fields in the Msimbazi river basin.







## 4. SITE ANALYSIS







Mangroves.

## 4.1 STAKEHOLDERS

### - People of Tanzania

The Msimbzi river valley is today the meeting place for national social meetings in Tanzania. The area is one of the few open spaces in the city located close to the city centre which make it suitable for this purpose. These kinds of social meeting places are important for the people to be able to take in and share information with the citizens and therefore a place suitable for this purpose should still exist in the park.

### - Dar es Salaam's residents

The city residents would have many great benefits from the park. Today the city lack of green and public spaces and the children and citizens in Dar es Salaam play, spend their time and proceed with daily activities in the streets of the city. A planned green area would give them more space in the city that is safe and it would also contribute to a good climate with clean air in the city. The park would be the only big park in the city and would function as an inviting meeting place for social activities and public meetings for the city residents.

#### o Indian residents

The Upanga area is a very dense area close to the Hospital where mostly Indians live. The residents live in high apartment buildings and would surely appreciate a green area close by to visit is for space and to experience nature.

#### o Kariakoo residents

Kariakoo is the most crowded district in the city with a dense building structure and a lot of traffic and people. The People living and working there could be in need of some extra space nearby that could be used for market place and social meeting places.

#### o Informal settlement residents

The people living in the informal settlements live in unorganized planning structures that create difficulties when it comes to transport, sanitation, electricity and waste management. A green area could provide the residents with food from urban farming, job opportunities, playing areas for children and

recreation.

### - Market vendors

The markets are today located along the streets in the city and in Kariakoo. The market vendors prefer to set up their business in places that are well visited and in shade. A park could offer suitable places for market stands.

### - People working in the area

The area is located close to the city centre and thereby there are many people working in the area. These people would need a nice place to go for their lunch breaks to relax.

### - Children

Most of the children play in the streets today so a close by park could give them a nice and safe place to play. The park would also be a nice place for parents to bring their children. There are some schools located close to the area. The school children could use the area to play and it could also be used for educational purposes.

### - People doing sports

The playing fields in the area are today well used, however they are very neglected. If the fields were put in order more people would use them and they could also be used by more organized sports clubs. Even other sport activities could be added to the park.

### - Hospital patients

The Muhimbili National Hospital borders to the area and the patients there could use the park for a recreational purpose. Nature, in the right composition can have a healing influence and reduces stress on us humans and there are proof that nature has a positive strengthening effect. Different healing gardens and restorative environments can be modified to suit the different individual groups such as children, elderly, employees, severely sick people as well as people that suffer from stress (Clare Cooper M. & Barnes M. 1999:203).



4.2 SPATIAL ANALYSIS

The area along the sea is very open, the attention is drawn towards the sea, but the busy Bagamoyo road also attracts attention.

On the other side of the road is the area with mangroves. It is very inbound and has no views out. The only views are across and along the river. Since the mangroves have no paths or entrances and walls along some parts of them, this area is difficult to enter or exit.

Next to the mangroves is a forest which is also an inbound area. It is also quite dense which limits the views and it has a lot of boundaries, such as the mangroves, walls and a steep slope in the south-east and informal settlements in the north-west.

The part just north of the Morogoro road is open and easy to enter and exit. From this area the road is very visible and easy to get to. People living in informal settlements to the north-west of it, cut across here. However the area is blocked in by the forest in the north and walls in the south-east. There are

a few trees but apart from that there is nothing to block the sight.

On the other side of the Morogoro road is a busy, open area. The two large roads make it very easy to enter. It is also visually open towards the informal settlements on the two other sides but here you can only enter on certain points.

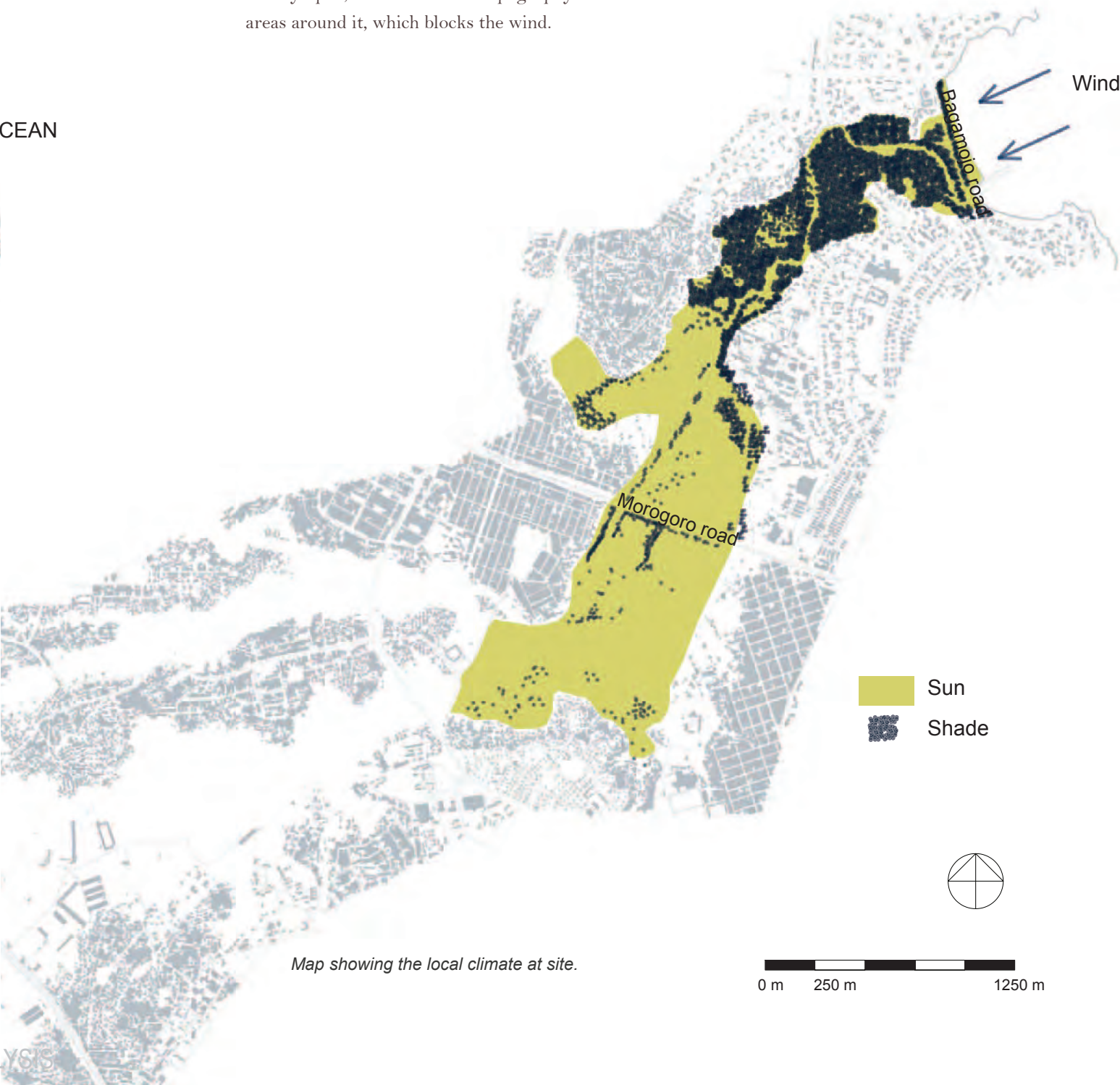
Furthest to the south is an open area that is easy to get to from the road. It is linked to the informal settlements that are on almost every side of it and there are only a few objects blocking the views.



Map showing spatial experience, arrows showing if the spatial structure is closed or open.

4.3 CLIMATE ANALYSIS

The local climate changes along the site. By the sea there is not much shade but a cooling breeze. In the mangroves and the forest, the dense vegetation makes it very shady, but it doesn't allow for any wind. Further inland it is much more open, not many trees that can provide shade and therefore it is a lot warmer. The trees that do exist there are very appreciated, there are always people seeking shade underneath them. In this area there is some wind, but very little. Even though it is very open, it is on a lower topography than the residential areas around it, which blocks the wind.



Map showing the local climate at site.





*Path going through the grasslands.*



*One of the districts within the area.*



*Wall between the Muhimbili National Hospital and the Msimbazi river basin.*

## 4.4 STRUCTURAL ANALYSIS

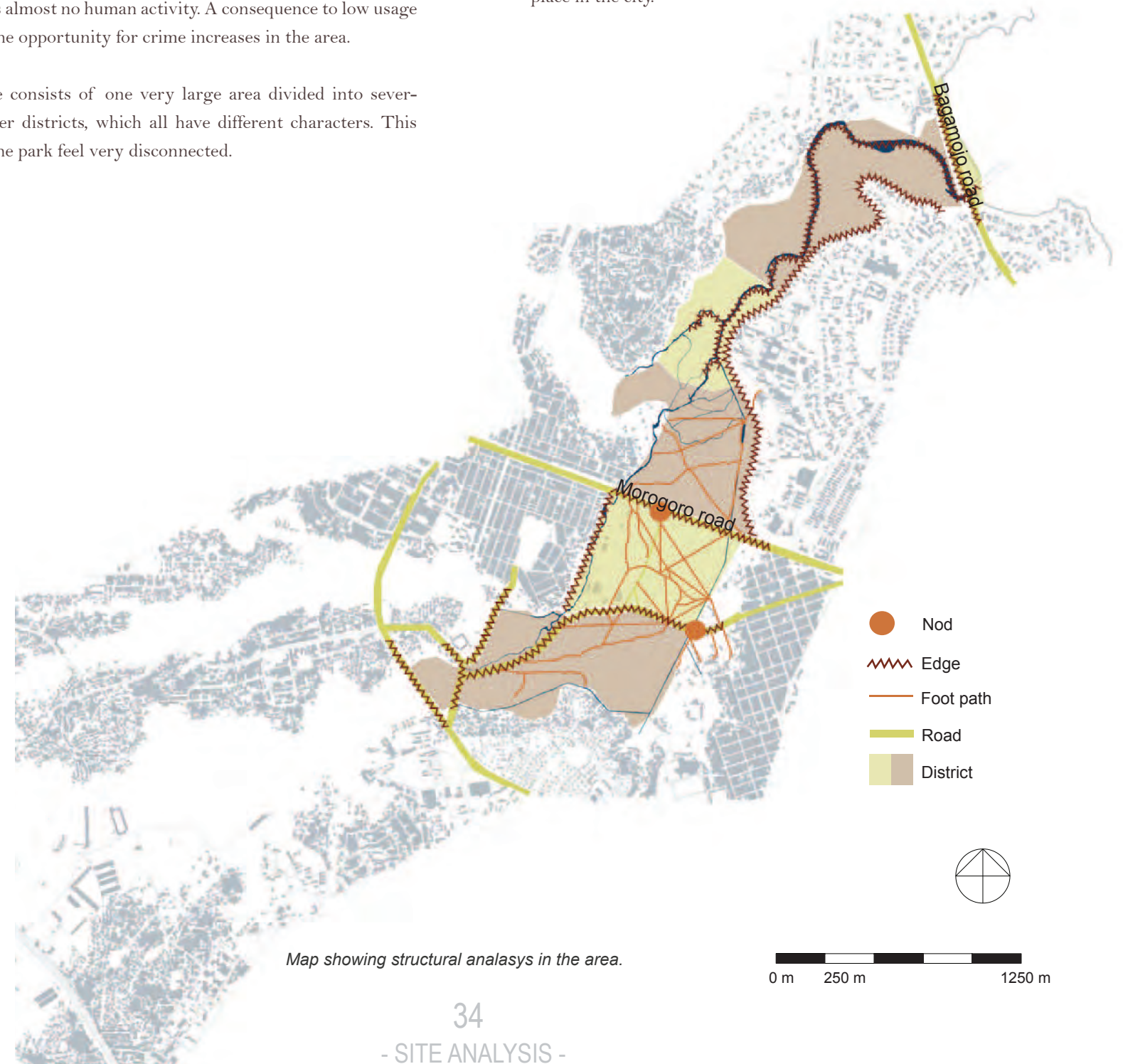
The structural analysis consists of edges, districts, landmarks, nodes and paths. It provides information about how an area is structured, where people move in the area and why.

There are edges along almost the entire border of the area as well as several going through it. This creates only a few entrances to the area and makes the site difficult to enter and to cross. Because of the site being so inaccessible some parts of it contains almost no human activity. A consequence to low usage is that the opportunity for crime increases in the area.

The site consists of one very large area divided into several smaller districts, which all have different characters. This makes the park feel very disconnected.

There are no obvious landmarks in the area, but orientation is not very difficult as the park is narrow so the city is visible on both sides of it. The roads dividing the park are good for orientation.

There are two nodes in the area. These are both located along the larger roads. Since the area between the nodes is already well used, this area should be further developed into a meeting place in the city.





4.5 SWOT

The SWOT-analysis is a summary of the inventory and analysis and indicates what is could become issues for the area in the future.

Strength

- Close to the centre of the city and many residential areas
- Green
- Water on site
- Different types of vegetation
- Established sports fields
- A lot of stakeholders (hospital, schools, Indian population, vendors, shade seekers, residents of informal settlements)

Weaknesses

- Informal settlements has taken over several areas of the site and are still spreading
- The area divides the city
- Floods
- Malaria mosquitoes
- Spill water from adjoining areas
- High crime
- Neglected
- A lot of barriers within the area
- Not much shade

Opportunities

- Large area, could fit a lot of different characters and uses.
- Several stakeholders
- Different water levels can be used to create a dynamic park
- Could be used to link different areas of the city
- One place for all, could help reduce segregation
- Parts of the area could be exploited in order to finance the park

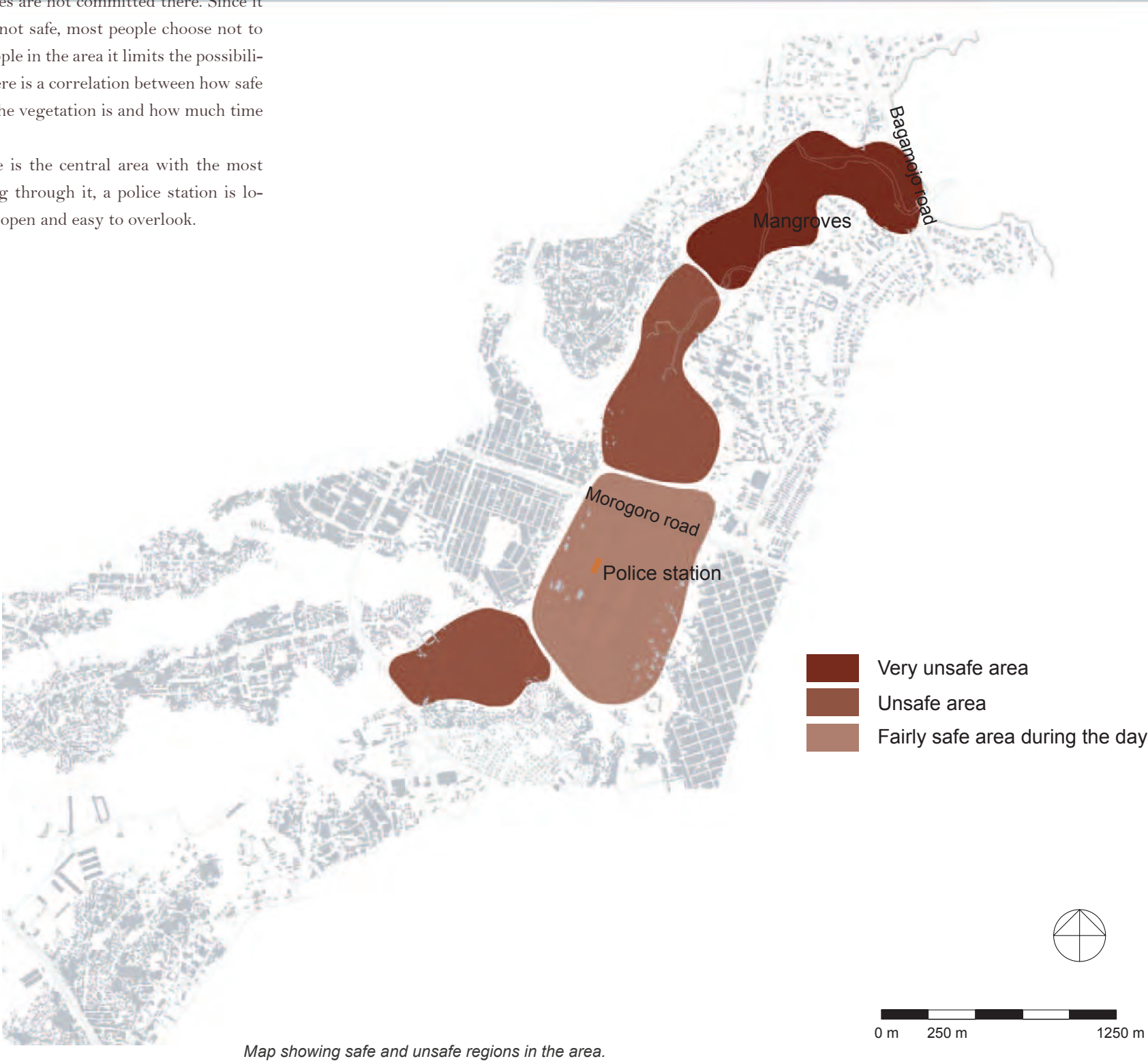
Threats

- Criminality can not be diminished, one group of people takes over the park
- The inhabitants don't use the park
- The technical solutions don't work
- No funds to develop the area
- There is a greater desire to build houses than park
- There is no successful solution the the problem of the malaria mosquitoes

4.6 SAFTEY ANALYSIS

The analysis is based on were the most crimes are committed as well as which areas are perceived as the most unsafe. For example the mangroves are perceived as the most unsafe, but the most amounts of crimes are not committed there. Since it is known that this area is not safe, most people choose not to enter there so with few people in the area it limits the possibilities for crime to occur. There is a correlation between how safe an area is and how dense the vegetation is and how much time people spend there.

The safest area at the site is the central area with the most amounts of people moving through it, a police station is located there and the area is open and easy to overlook.





# SITE ANALYSIS: TWO SELECTED AREAS - CENTRAL AREA

Two specific areas were chosen for a more detailed study. The two selected areas are the area south of Morogoro road in the center of the area and the area closest to the sea, by the Bagamoyo road. The areas have different qualities and problems and require different design solutions in a proposal.

The central area are the most well visited area today since it is close to Kariakoo and the city center, the dalladallas (local buses) stop there and a lot of people crosses the area daily. The flow of people shows that it could become a good spot in the city for social meetings and daily activities. A public park could make use of the area's qualities and also reduce some of the site specific problems today.

The other area is in contrary today hardly visited at all. The area has qualities in terms of being located close to the sea where there is a breeze and it has good communication possibilities but it is also covered with dense mangrove forests and, as mentioned before, very unsafe. A new residential area could solve some of the problems and also help financing parts of the park.

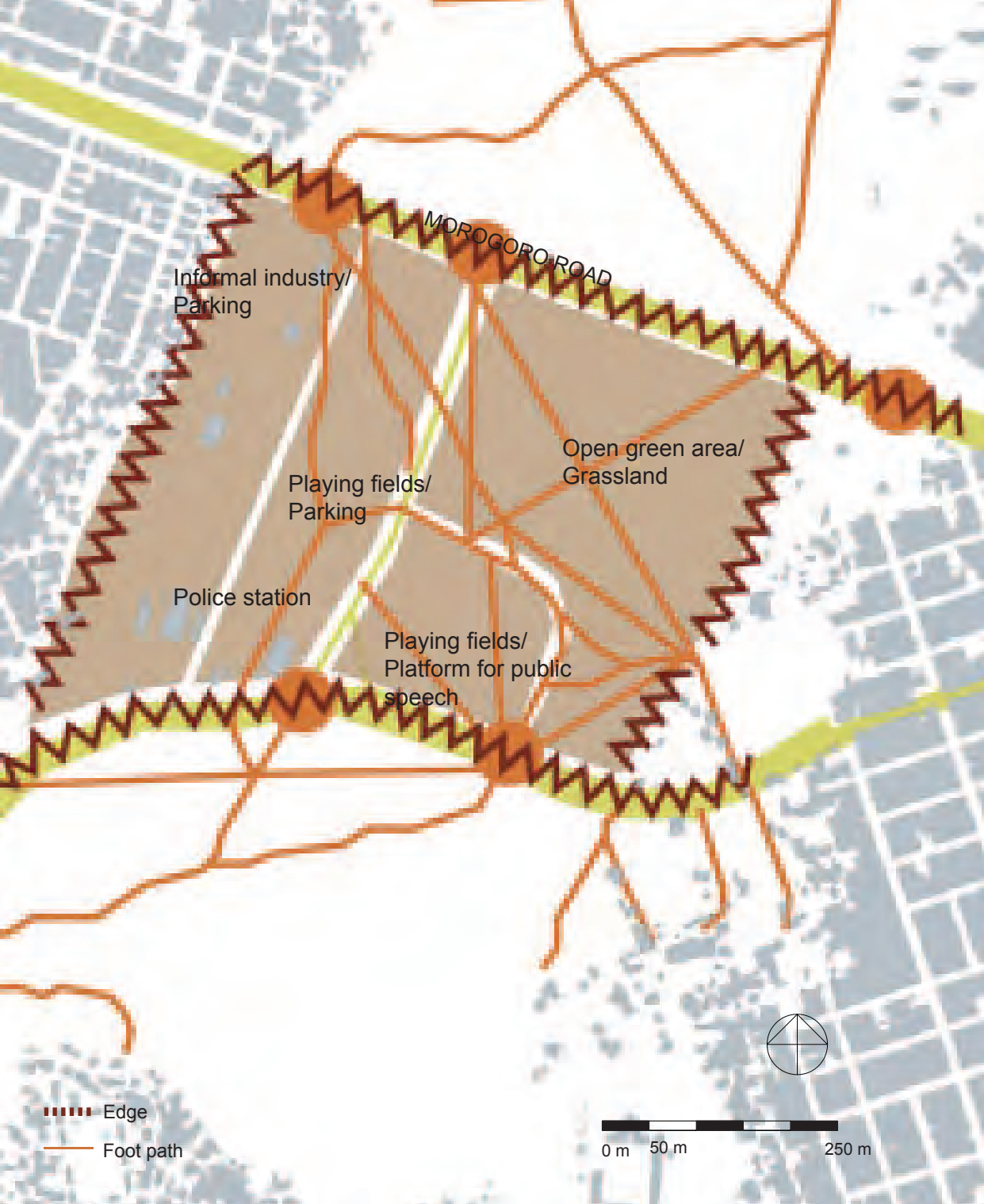
## 4.7 CENTRAL AREA

The central area is located between the Kariakoo and Magomeni district and is a big open area with dense areas of informal settlements along the sides. The area consists of mainly grassland and some trees that provide the area with some shade. There are a lot of people crossing the area daily and footpaths have emerged in the grass. There is waste lying around all over the place which makes the area look very neglected and uninviting. The area is also very unsafe even though there is a police station within the area. Since the dalladallas stops by the Morogoro road it contributes to the areas function as a node. The area is, according to our opinion, the most suitable area for an urban park since it is located close to the city center and a lot of people cross there daily.

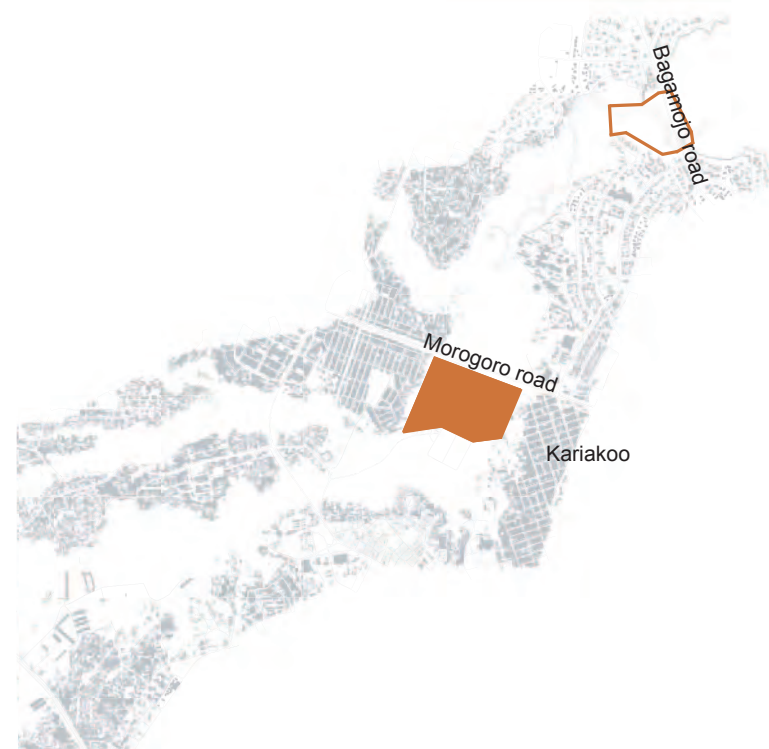
## 4.8 STRUCTURAL ANALYSIS

This is an open area and the part of the whole site that is used the most. The area is used in different ways, for example there are playing fields, a national speaking ground, a police station and some light industry. What defines the different districts is what they are used for, not the character or vegetation as it is similar in the entire area.

It is a very active area, which is visible by its many paths and nodes. The paths are not planned; they have simply developed where there was a need and a possibility to cross the area. The paths are unfortunately restricted by edges along the borders of the area. The borders consist of ditches and walls on the east side and the river and walls on the west side. There are no evident landmarks within the area, but since the area is quite small and open it is still easy to navigate since the roads and residential areas surrounding it are visible.



Open field and people crossing the river basin.





4.9 SWOT

Strength

- A lot of people in the area
- Central location in the city
- The area is well connected to the main roads in the city.
- The place has functioning activities today.
- There is a police station located in the area

Weaknesses

- Unsafe area
- Inaccessible
- Sun exposed
- Polluted water streams
- Waste disposal
- Flooding

Opportunities

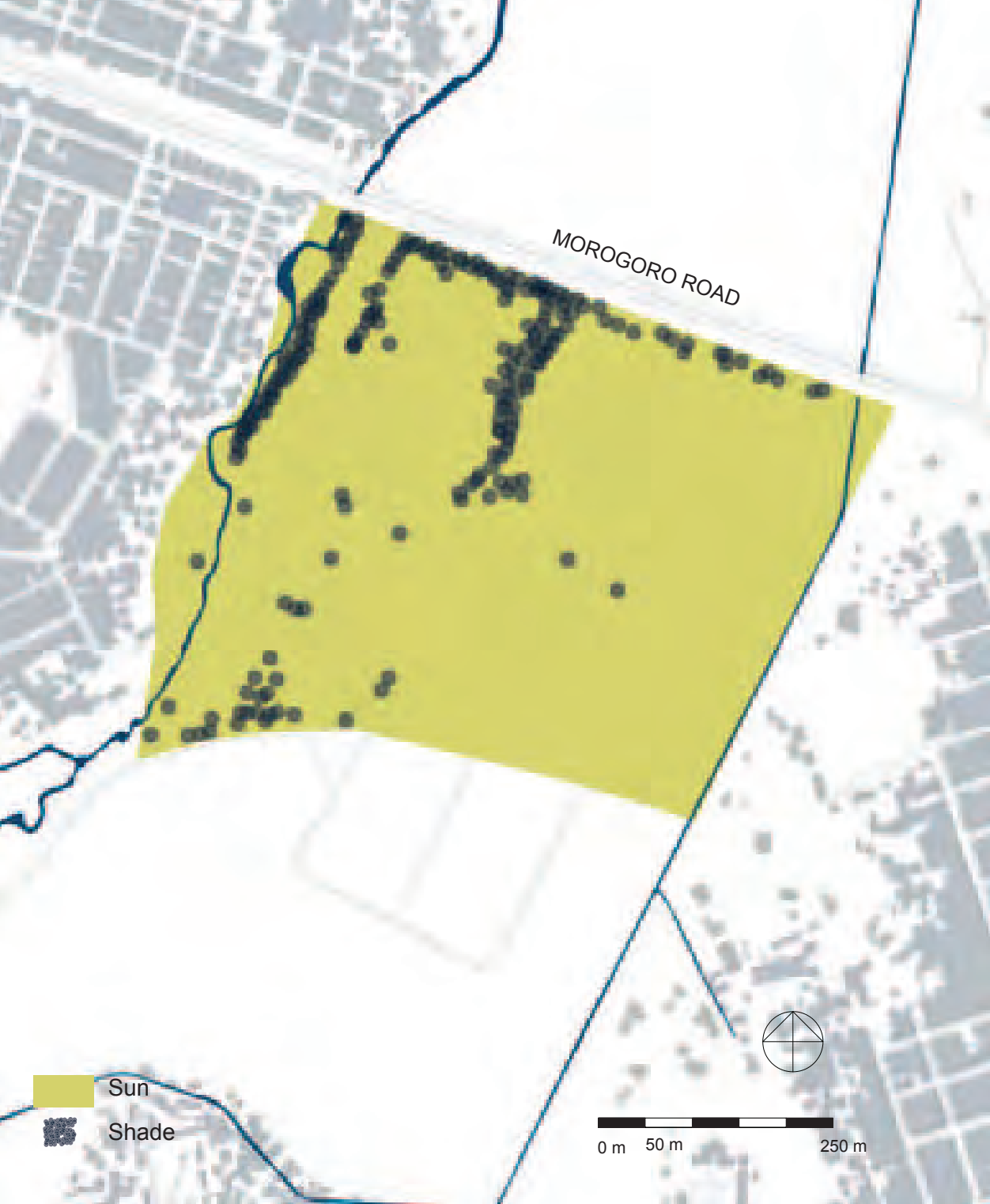
- The area is big and has a lot of potential
- A lot of people close to the area

Threats

- The resident might not be in need of an urban park
- Poor management of public places could result in the area becoming neglected
- The area could be eaten up by informal settlements

4.10 CLIMATE ANALYSIS

In this area there is not much vegetation which makes it very exposed to the sun and therefore very hot. The few trees that do provide shade are popular and often have people resting underneath them. Even though the area is open it does not get much wind since it is enclosed by residential areas that are on higher levels.





# SITE ANALYSIS: TWO SELECTED AREAS - AREA BY THE SEA

## 4.11 AREA BY THE SEA

The other area is located by the sea, between the Kinondoni and Upanga districts and is where the Mzimbazi river reaches the sea. The area consists mainly of dense mangrove forest. The Bagamoyo road goes by the area and gives it great potential in terms of communication possibilities to the rest of the city. The location of the area is an attractive spot for residential buildings with a nice climate close to the sea and with a sea view.



*A beach strip and the outflow of the Msimbazi river into the Indian Ocean.*

## 4.12 STRUCTURAL ANALYSIS

This is a homogeneous area that is seldom used since it is covered by mangrove forest. This is where the river is at its widest and together with the lush mangroves make impressive scenery with a diverse wildlife. However few people can experience this since the area is very inaccessible.

Since this area is hardly ever used there are no paths, except for one running along the eastern border. There are edges on the north and the south side which consists of walls. The area consists of one homogeneous district, as it is covered by mangrove forest. There are no landmarks there, but since the vegetation is so dense, even if there were landmarks they would not be visible.

## 4.13 SWOT

### Strength

The area is located by the sea  
Preserved nature

### Weaknesses

Unsafe area  
Inaccessible  
Highly trafficked road passing through the area

### Opportunities

The area is big and a part of it could be exploited with a new exclusive residential area. This would raise the status of the area and help financing some of the management of the park. The beach area could become a new meeting-place and a landmark in the City

### Threats

Poor management of the park could result in the area becoming neglected





#### 4.14 CLIMATE ANALYSIS

The mangrove forest provides a lot of shade which gives an agreeable climate compared to the surrounding areas. There are a few open places that do get sun, some small places that are not covered by vegetation and also the river. There is wind coming from the Indian Ocean, but it does not come far into the area, it is soon stopped by the dense forest.

#### 4.15 SUMMARY WITH THE THREE MAIN QUESTIONS IN MIND

Are the people in Dar es Salaam in need of a big public park and if so, who would use it?

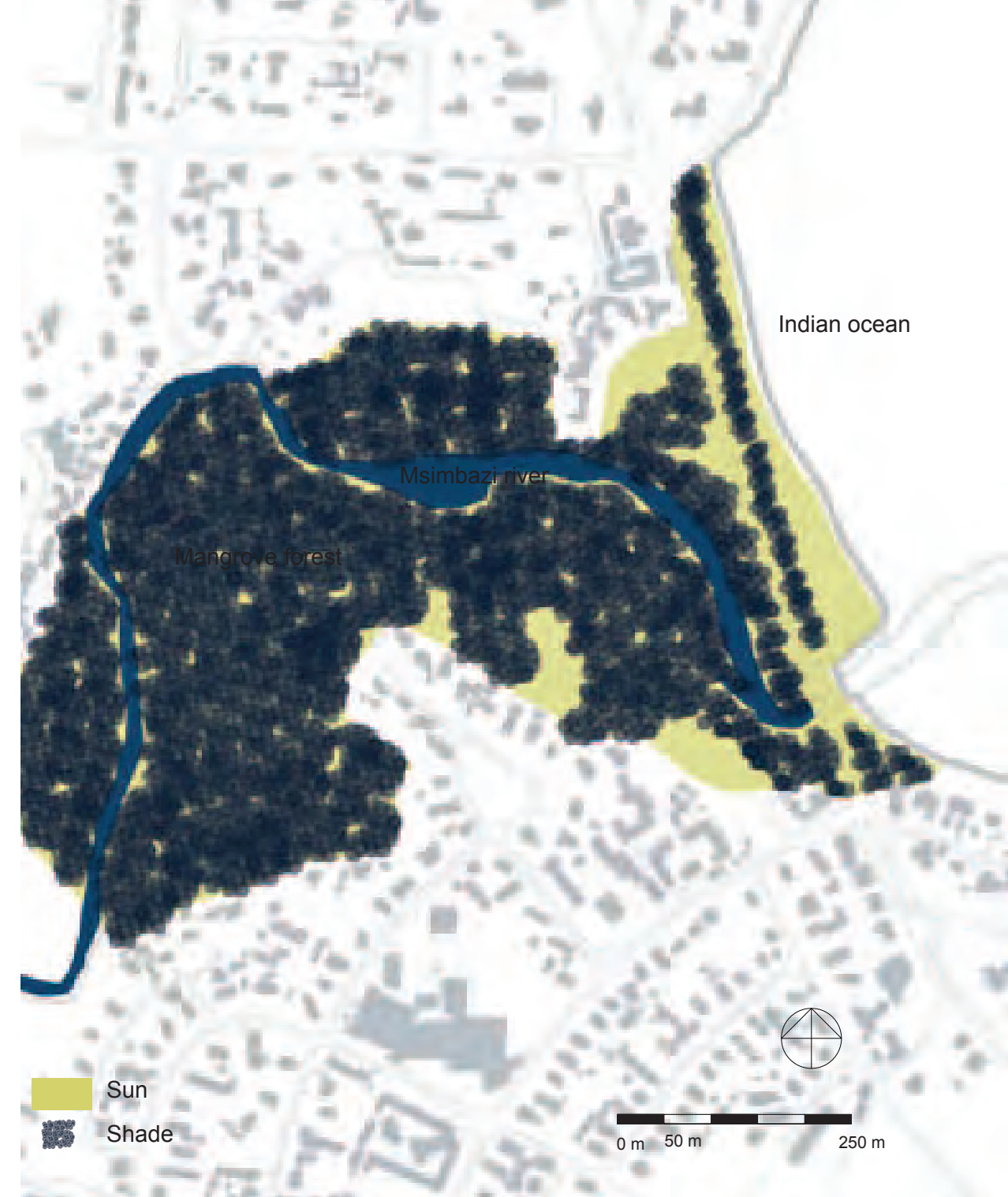
- The city residents would have many benefits from the park. Today the children and citizens in Dar es Salaam play, spend their time and proceed with daily activities in the streets of the city. A planned green area would give them more space in the city that is also safe and it would also contribute to a good climate with clean air in the city. The park would be the only big park in the city and would function as a nice meeting place for social activities and public meetings for the city residents.
- Some of the nearby residential areas are very dense. The residents probably appreciate a green area close by to visit for space and to experience nature.
- The playing fields in the area are today well used, however they are very neglected. If the fields were put in order more people would use them and they could also be used by more organized sports clubs. Other sport activities could also be added to the park.
- The Muhimbili National Hospital borders to the area and the patients there could use the park for a recreational purpose.

Is it physical possible, with all the site specific problems, to transform the Msimbazi river basin into a public park?

- The density varies a lot between the different parts of the park and some parts are not well connected.
- The local climate changes throughout the area.
- There are a lot of obstacles in the area, which limits the movement patterns.

Could some social difficulties, such as crime and segregation, be improved with a new park?

- There are many different stakeholders of the park and they all need to be taken into consideration. It is important that the park is for all groups of people as it could become a meeting place in the city, which could lessen some of the social difficulties. The stakeholders are the people of Tanzania, Dar es Salaam's residents which includes Indian residents, Kariakoo residents and informal settlement residents, market vendors, people working in the area, children, people doing sports and hospital patients.
- The park could provide an improved economy for some people by offering them work opportunities. For example in markets, recycling stations and urban farms.
- It is difficult to move through some parts of the area. By making it easier to cross through the valley it would become safer.



Dense and inaccessible mangrove forests.







# 5. PROGRAM







*Pleasant shaded walkway that could link areas together and work as a frame to the park.*

# PROBLEMS AND GENERAL IDEAS

The Msimbazi River river basin could be developed into an inviting park that could act as the lung of the city, a source of delight, grounds for recreation and pleasure, playgrounds, sightseeing, reflection of ecology, city lounge, centre of social interactions, city icon, etc. By developing the area into a park and recreation area it would become an asset to the people and it would also become a defined place, which would resolve the current uncertainty in the purpose of the use of land. It would also mean that a large public green area would be secured in central Dar es Salaam, which would greatly benefit the city's ecology and climate. The area has great potential to become an asset to the city's population.

## 5.1 GREEN AREAS

Many important places in the city neighbours to the Msimbazi river valley and instead of being "eaten up" by the city, the area could be used as a green resource (Mng'ong'o 2005:6).

The benefits of turning the Msimbazi river basin into a public green area are many. Among other things it could become a public place to do sports and meet friends, a space for public meetings and a place for children to play and explore. The air pollution in Dar es Salaam is also a problem and a big green area would work as a lung to the city.

The linkage between the few green areas in the city is not very good. The new park could help connect small green areas in the city and provide similar and more developed ecological environments for plants and animals.

## 5.2 INFORMAL SETTLEMENTS

As previously stated there are areas with more or less organized informal settlements surrounding the entire valley. The areas are homes to many people and the people living there could be in much use of a close by green area. Even if people need land to build on, it is still important so save the few remaining green spaces, like the Msimbazi river basin. The new park would need a distinct frame that would show where the park begins and ends to prevent the informal settlements from expanding further into the park. Some informal settlements would need to be removed to create a park area that would benefit the city but most of them would be kept.

## 5.3 PRESENT USES OF THE AREA

The area is today very big and spread out and has many different functions which make it scattered. Therefore it is important to gather the area to make it feel more cohesive in the new design. If the area is designed in a structured and logical way it could help people use the area for its planned purpose and it could also help the orientation in the city.

The urban areas surrounding the valley are very dense and it would be valuable to keep the park as green and open as possible, but still with functions benefiting the city like urban farming, sport facilities, market place, place for public speeches etc. These functions should possibly be located close to the dense areas in the centre like Kariakoo since there are a lot of people working, living and doing their shopping there. Having attractions and activities close to where people already spend time could help connect the featuring park with the surrounding city.

The wetland that is located between the residential area Upanaga and the informal settlement area Hanna Nassif should be filled out to remove the risk of malaria mosquitoes breeding there. The area is also close to the Muhimbili National Hospital, and could be turned into a recreational area used by both nearby residents and the hospital's patients.

Between the wetland and the river's out flow into the Indian Ocean, is the mangrove forest. Since mangrove forests are under threat of extinction this area has a value that could be used in the design. A kind of low-impact design would be suitable for this area, to preserve the natural environment but still make it accessible for visitors. An educational centre to inform visitors about the ecological importance of the natural wildlife would be placed there.

The area as a whole is in need of better status and one way of financing the building and the management of the park could be to develop a new exclusive urban district in a good location close to the Indian Ocean. The new urban area would be connected to the beach area that could be developed to a gathering place with restaurants, shops and walkways by the beach.



## 5.4 WASTE MANAGEMENT AND POLLUTION

Today the area looks neglected with garbage spread all around. Keeping the area clean and not smelling of burning garbage is essential in order for the area to function as a city park. It is also necessary to keep the park garbage-free for urban farming to work there. As it is now, the garbage being dumped on sight makes the vegetables possibly polluted (Ngware 2003:30).

Less waste on site could also mean less flooding. The waste clogs up the drains within the area, which increase the floods (Ngware 2003:43).

## 5.5 URBAN FARMING

The concept of urban farming is used at the site in some small areas. If the site was further developed in the purpose of farming, the crops grown there could become a food resource for the city. Urban landscapes would also provide the site with a versatility of ecosystems which would benefit the ecology in the city.

One problem about the urban landscapes would be that they can get flooded easily and not resist land erosion. On the other hand with mixed crops and tree plantations this problem could decrease. Drainage ditches and canals could also help maintaining the landforms and plantations.

The nurseries, located along Dar es Salaam's roads today, that are selling seedlings shows that there is already a market for this type of business and it could be further developed with additional urban farming.

## 5.6 INFRASTRUCTURE AND TRAFFIC LOAD

The roads going through the site are today vital to the city, it would therefore be impossible to remove or diminish them. However, they divide the area since they are difficult for pedestrians to cross. In order for the different parts of the park to connect better it is important to create well-functioning pedestrian crossings here.

New pathways between the different areas around the park would make it function as a link, rather than as today, a barrier.

More entrances would also make the park easier to access and thereby hopefully more popular to spend time in. In Tanzania the weather is very warm and in such warmth you would not walk too far to get to a park and therefore it is important to have many easily accessible entrances.

## 5.7 CLIMATE

The citizens in Dar es Salaam are in much need of shade. All social gathering spots and resting places outside are under some sort of shelter, often a tree. Since it is so hot during the day, shaded walkways and places to sit in the shade are much appreciated. The wind is another element that could reduce the heat. Therefore it would be good to try to keep places open and exposed to the wind.

With an exception of a few trees, the only shaded area today at the site is the Mangrove forest.

## 5.8 PLANT MATERIAL

Only local plant material should be used in the design of the park to save native species, as imported exotic plants can sometimes drive out the domestic plants. Trees in large amounts that provide a lot of shade would create nice places to rest and walk. To create a safe park there should not be any mid-high or high bushes that could appear threatening as possible hiding places for burglars at night.

The variation of seasons is nice if it is shown in the park. Flowering trees and flowers could create nice happenings in the park throughout the year.

## 5.9 SUSTAINABILITY

The Msimbazi river basin is in need of change, it could become an asset to the city dwellers instead of a problem area. For a better, more sustainable and more useful development of the site we have suggested different activities like urban farming, toilets that make compost, market places, places for social activity and playing etc.

## 5.10 FLOODING

In order to make full use the park the flooded areas have to diminish. This can be done through rising up the lowest re-



*Flowering trees could create nice happenings in the park throughout the year.*





*Shallow water at the Msimbazi river basin that serves as a breeding place for malaria mosquitos.*

gions, building canals, digging more drains, keeping the new and present drains free from waste that can clog them up, having a lot of plants and not letting urban settlements take up any more space.

### 5.11 POLLUTED WATER

There is a lot of polluted water coming in to the area from surrounding industries. This water could be dangerous for the people living here in terms of polluted drinking water and crops grown here. The polluted water cannot be decontaminated in the park, this is something that has to be done in the factories. We hope that in the near future the increased awareness for the environment will lead to the factories in Tanzania having to take responsibility for their discharges and therefore purifying the water before letting it out.

### 5.12 CRIME

As the valley is very unsafe today, it is not an area that should be visited or passed, especially not after dark. The safety aspect should be a part of the design, to create a place where people would feel safe to spend time.

Where the playing fields are located is today the safest area, probably since it is light and open. The police station located there is also likely to help create a safer atmosphere. This area should be designed so that the sight remains unblocked, with no places for criminals to hide. There should be walking paths crossing the area that goes from one urban district to another to create pathways through the park and thereby getting more people passing through and possibly stopping. More people in the area would make the area safer in terms of crimes like burglary.

The mangrove area is on the contrary very enclosed and not safe and is in need of being opened up and becoming more accessible.

Different ways to diminish crime over all in the area would be to clean up waste, invest in the area, open up, make it more accessible, more easily oriented and lit at night. If the area would feel safer then more people would spend time there and crime prospects would thereby be reduced.

### 5.13 MALARIA

As the still shallow water in the area is a natural habitat for malaria mosquitoes, removing these regions within the Msimbazi river basin would be positive. By taking away beneficial breeding places for the mosquitoes, the spread of infection could be decreased. To reduce the number of mosquitoes the water needs to keep flowing, be deep or contain salt. The water in the mangroves is free from mosquitoes as the salt water from the sea comes in during the high tide. But further from the sea there is still shallow water all year round. During the rain seasons the amount of water on sight increases. To reduce the amount of malaria mosquitoes this water needs to be deeper or put in movement.



## MAIN PROBLEMS:

- The area is unused and unsafe. Criminality is a big problem and has to be reduced so that people would feel comfortable visiting or passing through the park.
- The area is a barrier in the city and separates different areas and groups of people from each other.
- It is a large and diverse area and the undefined spaces create an uncertainty of its proper use.

## SOLUTIONS:

- Improve the organization and orientation of the areas.
- Define different places, raise the status of the park.
- Create activities that attract a lot of people, like urban farming, recycling stations, market, place for public speech, sport fields, restaurants, residential buildings and playgrounds.
- Improve the local climate where people dwell.
- Add foot and bicycle paths that connect different parts of the city. It could help making the area a part of the city.
- Give the park useful functions that could provide the citizens with work opportunities and food. The area could become an asset to the city.
- Provide the area with a clear border and identity, this by using a cohesive design and materials throughout the park.



*The possibility to activities like football would be much appreciated in the park.*



# CASE STUDIES

Inspiration has been collected from already completed projects from places with similar start off conditions as the Mzimbasi river basin, the projects are here referred to as case studies. Three parks are here presented and all of them have different focus points and solutions to site specific problems.

## 5.14 THE RED RIBBON TANGHE RIVER PARK, CHINA

The Red Ribbon Park is located in Qinhuangdao City, China and was completed in 2007. It is now a recreational area with a very high ecological diversity.

As Qinhuangdao City grew, a demand for a recreational area to use for fishing, swimming and jogging for the nearby residents arose. The site had several issues that had to be addressed in order to fulfil the demands. There was for example a former garbage dump site in the area that contained abandoned slums and irrigation systems that had been neglected and deserted. This was an issue that had to be taken care of. It was also an unsafe place that was difficult to access since it had to a great extent been covered by shrub and grass. There was a demand that the river flowing through the area would be channelled and to be surrounded by ornamental flower beds. However, the site contained a rich native vegetation and thanks to the lush and diverse vegetation there were a number of different habitats for different species (ASLA).

Turenscape have three main objectives in their work. “First, a solution must be found to address the energy and environmental crises. Second, cultural identity must be regained, and third, the sense of spiritual connection to the earth must be enhanced” (Kongjian Yu).

With this in mind turenscape decided to create a 500 m red walkway through the area, keeping as much of the existing river corridor, plant material and natural terrain as possible. The walkway has several purposes, boardwalk, lightning, seating, environmental interpretation and environmental orientation. In the park there are four pavilions along the walkway called the red ribbon. These function as meeting places, visual focal points and as protection against the weather (ASLA).

There are several similarities between the Msimbazi river valley and the site for the Tanghe River Park before it was build, such as that both environments have a diverse vegetation and that the areas have been neglected and as a result of this they have been unsafe and difficult to access. Through creating the red ribbon, Turenscape has made the park much safer and easier to access, but still managed to keep the natural landscape of the park. This is something that we hope to achieve in our proposal.

## 5.15 MILLENNIUM PARKLANDS, SYDNEY OLYMPIC PARK, AUSTRALIA

Sydney Olympic Park is located in Sydney, Australia. A part of the area was redeveloped for the 2000 Olympics and has today turned into an urban park which a part of it consists of natural parklands.

Back in history, during the 1900's a large part of the park was industrial wasteland with industries like state abattoirs, state brickworks and a chemical industry. The area also included one of Sydney's large rubbish dumps. Because of economic difficulties most of the industries were shut down in the late 1900's.

The different uses of the area through history has required major modifications to the natural environment. Mudflats and wetlands were filled in during the early 1800's to gain more land for docks and wharfs ([www.sydneyolympicpark.com](http://www.sydneyolympicpark.com)).

When the area was redeveloped for the 2000 Olympics the concept plan for the Olympic sites and park sites had to respond to four key sustainable environmental principles:

- water conservation
  - waste minimization
  - pollution avoidance
  - the protection of significant natural and cultural environments
- (Landscape Architecture foundation 2010)

The park was planned in four different zones and the parklands were one of them. Because of the land being a formal industrial land the soil was highly contaminated and could not really be used for anything. The land had on the other hand an important value as it was home to many plant and animal spe-

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cies (Landscape Architecture foundation 2010).

The millennium parklands were designed by PWP Landscape Architecture. The idea with the park was to use the formal industrial land and turn it into a sustainable natural parkland used for recreation and education. Different techniques in land remediation strategies was used to improve previous contaminated soil and habitats like mangrove forests was preserved to save sensitive species in the area. The new paths for biking, walking and jogging made the area accessible. The old industrial areas were saved as a cultural heritage to preserve the history of the area (Landscape Architecture foundation 2010).

Ever since the 2000 Olympics ended the area has continued to develop with the vision of becoming a new urban centre with environmental and sustainable practices. The park has a master plan 2030 which has the intention to develop the area into an urban centre where people work, live, learn and play. The city would be characterised by low-density commercial and industrial buildings in the centre that would then evolve into pedestrian oriented residential neighbourhoods with commercial and community uses. The whole area would be connected to the green parklands. The building structures from the city to the parkland is suppose to be a transition of scale and thereby provide visual connection to the inner city and also connect the parkland with the city in a more natural way ([www.sydneyolympicpark.com](http://www.sydneyolympicpark.com)).

The Mzimbazi river basin in Dar es Salaam has many similar conditions as the area for the Millennium parklands before it was redeveloped. The Mzimbazi river basin is inaccessible, has contaminated water and soil and has precious habitats like mangrove forests. The kind of low impact and land remediation design used in the Millennium parkland could inspire our proposal. Also the vision of connecting parklands and residential areas should be something to consider in the new design.

## 5.16 FORODHANI GARDENS, ZANZIBAR, TANZANIA

The Forodhani Park is located by the seafront in Stone Town in Zanzibar and is a quite small park, about 1.4 acre. The popularity of the park made it very rundown, as a result of this it was restored in 2009 as a part of the seafront rehabilitation in

Stone Town, but it still has its old formal symmetrical layout (Mande, M & Oluoch, F).

The Forodhani park is still a popular meeting place in Stone Town. There are a lot of food vendors there, which makes it a busy place in evenings as many people goes there to eat dinner. The location just by the sea, and some trees giving shade makes the climate there very agreeable. The park mainly consists of lawns, wide footpaths, trees and a lot of benches. The park landscape is open, as it doesn't have any concealing shrubs, and is often filled with people which makes it feel safe.

The park was restored by the Aga Khan Trust for Culture and the Revolutionary Government of Zanzibar. The aim was to upgrade social and recreational amenities and at the same time create economic activity that would boost the sustainability of the park (Aga Khan Trust for Culture). In a speech at the newly restored park, the Aga Khan said that the main focus had been social sustainability. It was important that the park generated its own income that could be spent on maintenance and future development, and not being dependent on government support (Aga Khan Development Network). The restoration created jobs during the 18 months that it went on. After this the area could supply work for people in the informal sector, such as food vendors. It was very important that the park had the right balance between commercial activity and leisure (Aga Khan Trust for Culture).

The Forodhani park is in the same climate and culture as the Msimbazi river basin and it is a very popular place that works well. We found the focus on economic sustainability in Forodhani park very inspiring. One of the ways they had dealt with this was by creating jobs, but since the park is so small the number of different job possibilities was limited. Our site is much larger and we could therefore build on this theme and create a park that contains several different work opportunities besides food vendors. The openness and activity there makes it feel like a safe place, our site is today very unsafe and we could use some of the principles that are used there. Perhaps not in our entire area, but in the most active parts. The Forodhani park is open to the sea and is shaded by trees, it thereby gets a comfortable local climate. As it is very warm and humid in Dar es Salaam, creating a good local climate is something that we need to focus on as well.



*Millennium Parklands, Sidney Olympic park, Australia (Ignatieva 2010).*





Forodhani Gardens, Tanzania.

Innspiration to bring to the new proposal:

The Red Ribbon Park:

- The park design solved issues like inaccessibility and removed uninviting environments like former garbage dumps.
- The new park raised the status of the area, simplified the orientation and made it safer.
- The river flowing through the area was channelled and more controlled.
- A rich native vegetation with habitats for different species was preserved through a low-impact design.
- The park got a strong character and a cultural identity was regained.

The Millennium Parklands:

- The aim to create a sustainable natural parkland used for recreation and education.
- Low impact design preserved the natural landscape and habitats like mangrove forests was sealed to save sensitive species in the area.
- New paths for biking, walking and jogging made the area accessible and created activity.
- Connecting parklands and residential areas.

Forodhani Park:

- The park focuses on economic sustainability and encourages local businesses like food vendors.
- It is an open and well used area which makes it feel safe.
- The location by the sea, the open park landscape and the trees that provide shade create a pleasing local climate.
- The park is divided into different zones.



# CONCEPT AND SITE SPECIFIC IDEAS

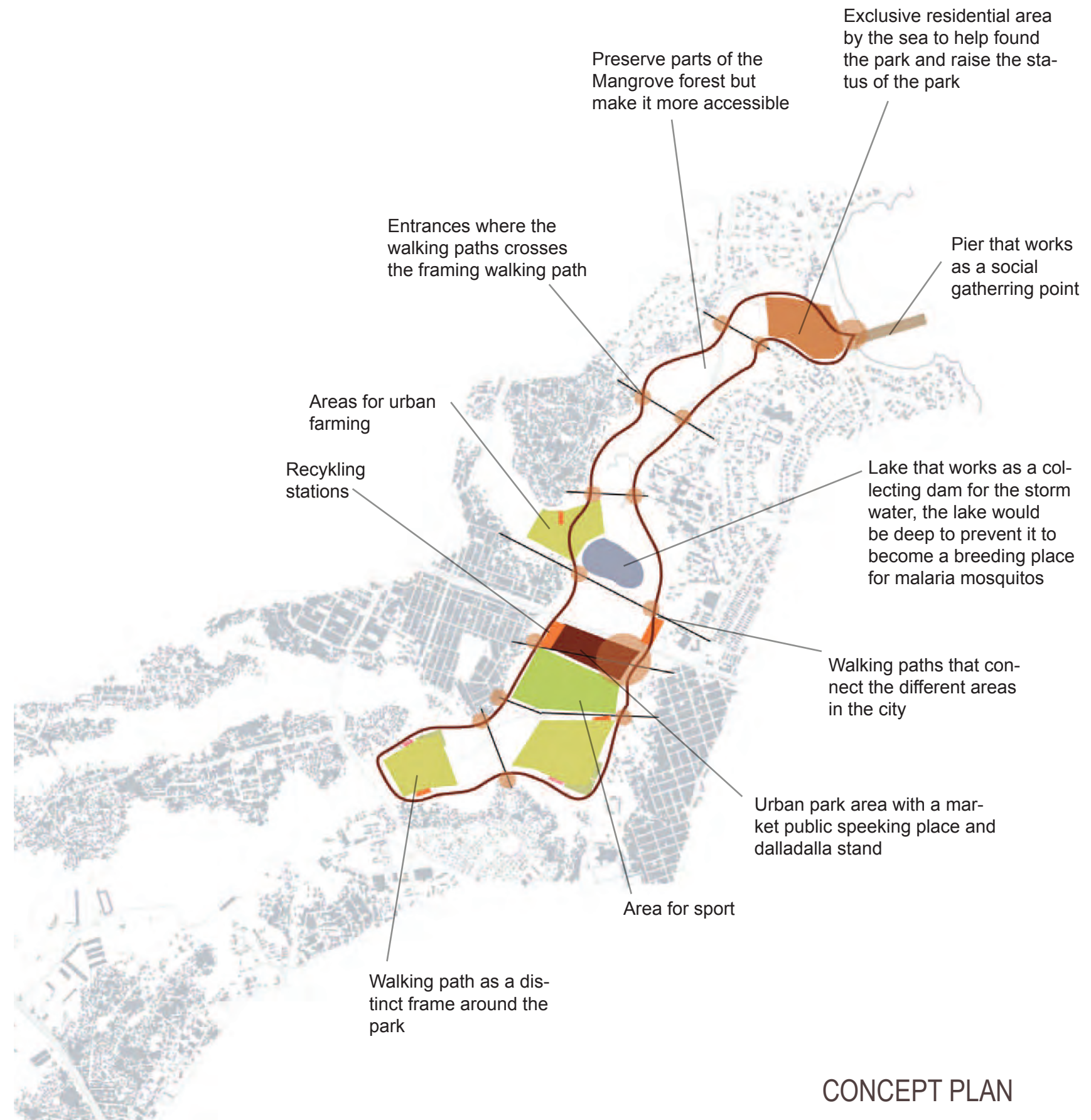
## CONCEPT:

The new park will become an asset to the city and the people living close to it, as a part of the city cycle. The aim is to make the park useful but still fun, exiting and aesthetically pleasing. The park will connect different parts of the city and make the surrounding city function better and simplify the lives of the people both in a short- and long term perspective. The aim is also to show the versatility of the African landscape, plant material and material.

The concept of the new park will be a mix between built city structure and green and the aim is to weave this into the preserved natural landscape and environments. It will clearly show in the park what is build and what is naturally preserved and the contrast will create an exciting landscape. With domestic materials, different use of African patterns, indigenous plant material and activities that will be appreciated by the dwellers the new park will serve a purpose in the city. The park will be a natural park with variation in landscape and also contain parts that are more city like, like an urban park and a new residential area.

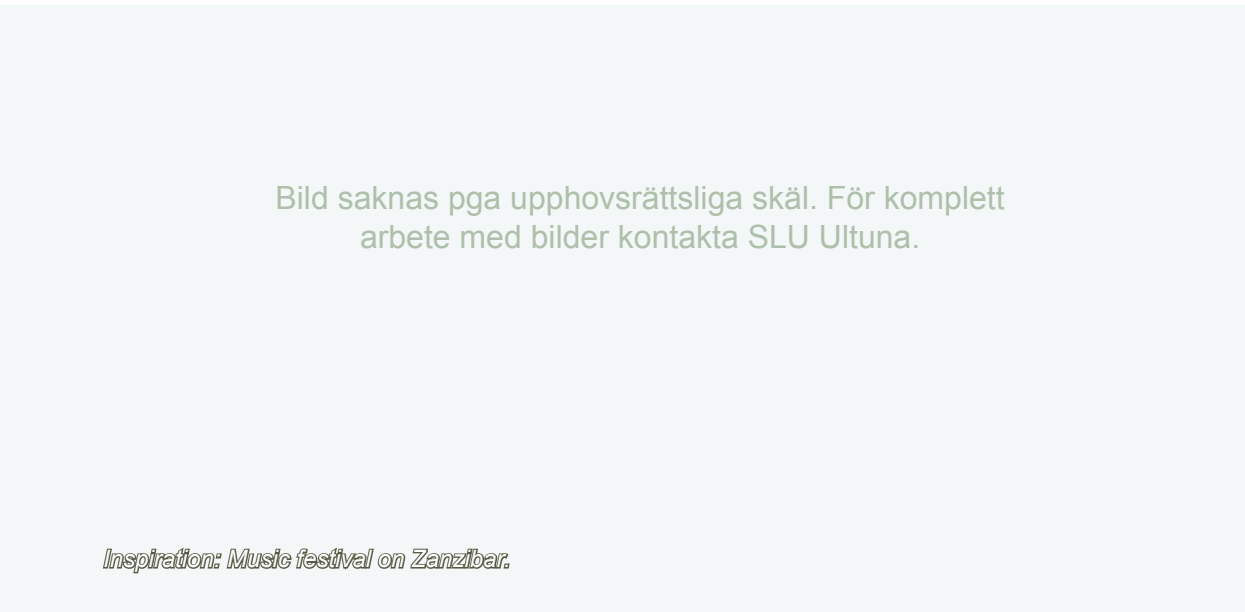
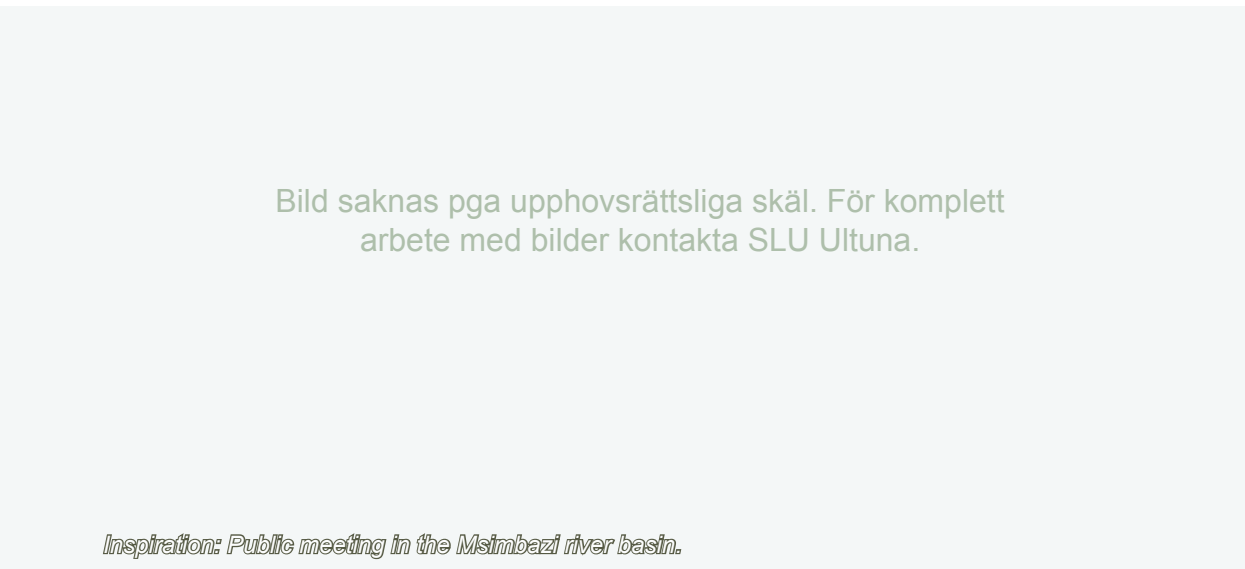
The new park would benefit the city both socially, economically, ecologically and physically:

- Socially: A safer area with a lot of activities and meeting places.
- Economically: Both work and farming possibilities.
- Environmentally: Less pollutions and malaria mosquitoes, preserved green area and domestic plant material.
- Physically: Different parts of the city will be connected. The floods will be reduced.



CONCEPT PLAN





# PROBLEMS AND GENERAL IDEAS: TWO SELECTED AREAS

## 5:17 CENTRAL AREA

### PROBLEMS:

- The area is inaccessible.
- Neglected area with a lot of waste.
- There area is unsafe and the crime level is high.
- The whole area is very hot and sun exposed.

### SOLUTIONS:

- More entrances and paths through the area would make it more accessible.
- By giving the area a organized structure with defined functions it could become well visited and feel safer.
- By planting numerous trees that provide shade the local climate would be more pleasant.

### CONCEPT:

The concept for the urban park is the city meets green. The structures of the surrounding city will be repeated in the structure of the park to improve the orientation and organization. Accessible walkways with beautiful African patterns will also help to orientate in the park. Different activities create a vivid environment and exiting materials and plants create variation in the park. Important elements will be the floor and ceiling as the park will be an open area with strong spatial structure but still with uninhibited movement possibilities and good visibility. The floor will consist partly of different materials with African patterns and the ceiling will consist of tree canopies and roofs to provide a spatial structure, shade and simplify orientation. The trees would be of different species in different areas which would create variation in the area and a clear structure.



# 5:18 AREA BY THE SEA

## PROBLEMS:

- The area is very unsafe.
- The area is very inaccessible.
- There are no places for social activity in the area.

## SOLUTIONS:

- Open up and locate different activities in the area and it also create places for people to meet.
- By creating a new residential area in the park there would be more people in the area during the day and also night. This would make the area feel safer.

## CONCEPT:

The concept of the design of the new residential area is a built area meeting the surrounding natural elements like the sea water and vegetation. The buildings will be an unnatural element in the natural mangrove forests but it will follow the shapes of the natural landscape. The nature will shape the built and not the other way around.

The new residential area will make the area accessible and offer different social meeting places in a safe environment.

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*Inspiration: Café.*

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*Inspiration: Men playing chess.*

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*Inspiration: New residential area, Dockan, in Malmö.*







## 6. PROPOSAL





# PROPOSAL - MSIMBAZI PARK

## 6:1 MSIMBAZI PARK

The main aim with this proposal is that the new park should make the lives of the people living nearby it easier and serve as an asset for the people and the city of Dar es Salaam.

The park is divided into different sections with different characters and qualities. Closest to the sea is an area with a pier, a new residential area, several public places, restaurants and cafes. Adjacent to this is a mangrove forest that have been preserved and opened up to make it more accessible. South of the mangrove is a landscape park with a constructed lake, lawns and pathways, there is also some urban farming there. This part ends by the Morogoro road where an urban park is suggested. The urban park contains a lot of different activities and meeting places. The final part of the park consists of urban farming and grasslands.

The new park contains several different vegetation types and activities but the spatial structure and the materials keep the area cohesive. All the entrances have for example the same visual appearance but with some differences that give them character and along the entire site there is a foot path that keeps the park together and serves as a border to the park. Walking paths with ceilings link the different parts of the city as they cross the area. Only indigenous plant material will be used in the park to benefit the local ecology. For the park to benefit the city socially and economically there will be a lot of job opportunities and social meeting places. By opening up parts of the park and adding activities the park will become safer. The materials in the park will be domestic and bring out the spirit of Tanzania and Africa.

The physical improvements include less floods which will make the area usable all year round and improve the quality of life for the residents in the nearby informal settlements. Also, by diminishing the floods and creating the new lake the malaria mosquitoes won't be able to breed there.

The Msimbazi river basin is a large area and to be able to make a well thought through design proposal, within our time frame, we have chosen to make a conceptual design proposal for the whole site and to design two areas in detail. The two selected areas are the area south of Morogoro road in the center of the area and the area closest to the sea, by the Bagamoyo road. In this part is the conceptual proposal for the whole park presented.

### MAIN PROBLEMS:

- The area is unused and unsafe. Criminality is a big problem and has to be reduced so that people would feel comfortable visiting or passing through the park.
- The area is a barrier in the city and separates different areas and groups of people from each other.
- It is a large and diverse area and the undefined spaces create an uncertainty of its proper use.

Map over the whole Msimbazi park.



6:2 PARK CHARACTERS



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*Inspiration: Manhattan beach pier.*

1. THE BEACH

The beach area with a pier and beach walk becomes a new social meeting spot with restaurants, cafes and some markets.

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*Inspiration: Hammarby Sjöstad.*

2. RESIDENTIAL AREA

The new residential area by the water will have buildings that fit well in the environment and are climate adapted. There will be walkways and many opportunities for social meetings in this area.

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*Inspiration: Nature park.*

3. THE MANGROVE FOREST

The mangrove forest will be opened up and become an accessible environment that serves an educational purpose for both grown ups and children. Walkways in wood above ground will create an exiting and fun environment.

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*Inspiration: Walkway.*

4. THE LANDSCAPE PARK

Parklands in an open landscape with trees that provide shade. Wide walkways makes the areas accessible.

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*Inspiration: Skate park.*

5. THE URBAN PARK

The urban Park is a lively place with skate parks, markets, a dalladalla stop, a recycling station etc. The place will become a social meeting place for the city.

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*Inspiration: Urban farming.*

6. URBAN FARMS

The areas with urban farming will shape interesting landscapes in the in the park and also provide the residents with food. Different crops will be farmed and create variation in these parts of the park.



# PROPOSAL - ELEMENTS OF THE PARK

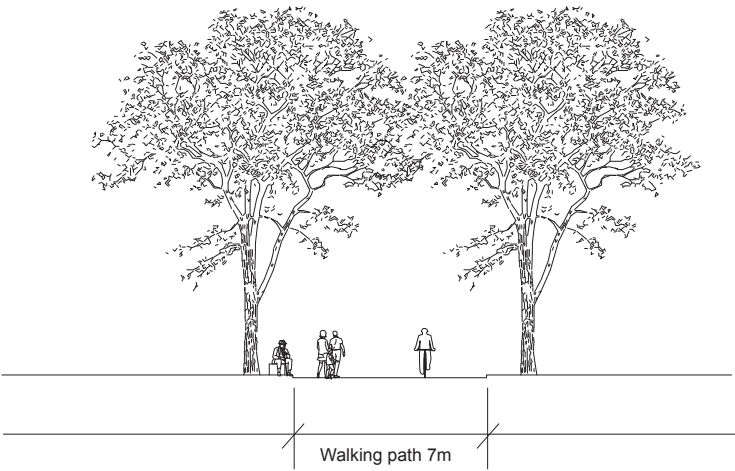
## 6:3 THE WALKING PATH

Along the edges around the area runs a distinct walking path that works as a frame of the park. The frame is important to define the borders of the park which today is very unclear and creates an uncertainty of where the park begins and ends. As the informal settlements around the Mzimbazi river basin slowly are spreading into the area a defined border, that shows what is park and what is urban area, would hopefully control the spread. A border is not necessarily a high wall, close to the playing fields there is a ditch on one side and the river on the other, no houses has been built beyond these. If a ditch and a river can function as border, than so should a walking path. The walking path is approximately xxx km long and could be used for recreational purposes or transport. It will also functions as an element that keeps the park together as a unit. The walkway will be lined with alleys of trees that provide great shade, which is important in a sunny and warm climate like in Dar es Salaam. There will also be benches along the walking path every 50 meters so that there will be generously with seating possibilities and people can sit and rest in the shade. At night the path will be lit by solar energy driven street lamps. The walking path crosses the footpaths that go through the park and in these crossings there will be characteristic entrances.



## 6:4 ENTRANCES

Where the footpaths in the park cross the walking path that goes around the area there will be entrances to the park. The site is large and varies in character, usage and vegetation, because of this all the entrances will have the same visual appearance but differ in character. This will make the park more cohesive and make it clear that you are entering the same park, no matter where you enter. The different characters in the entrances will come from different patterns and plant material at every specific site. The characters will help orientation in the park. The entrances along the main paths will need to be larger than some of the others, but the importance is not that they all have the exact same measurements only that they have the same visual expression. At every entrance there will also be maps to help orientation in the park.

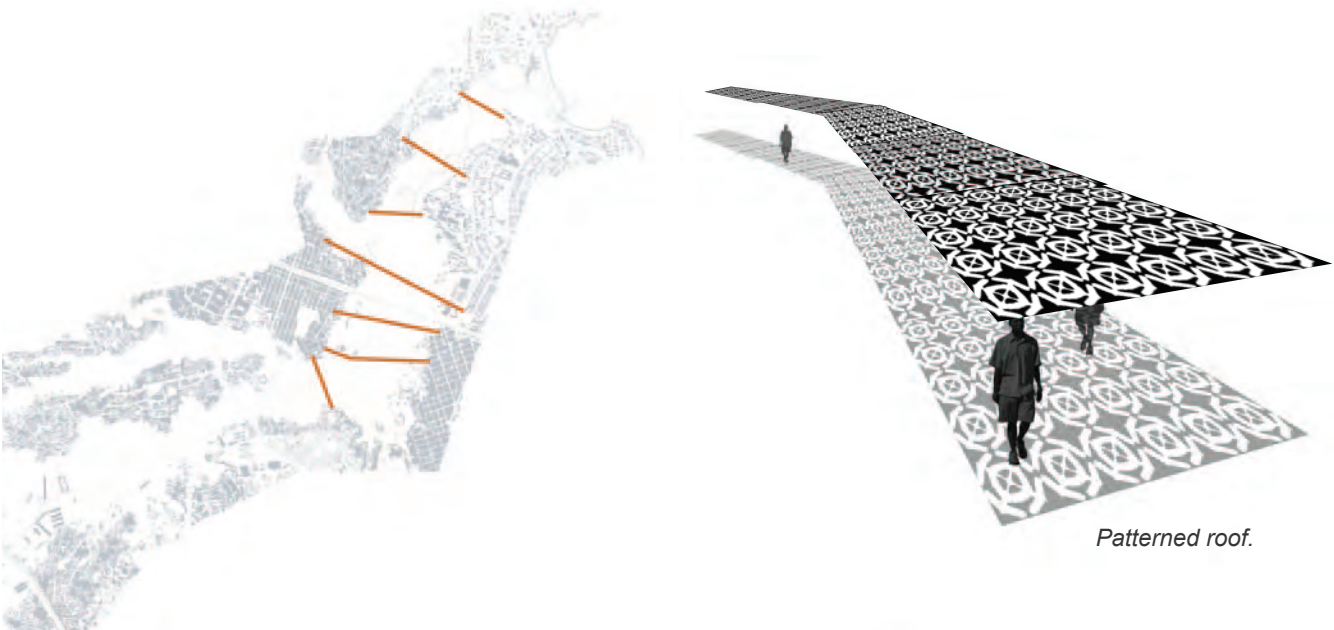




6:5 FOOTPATHS

Dar es Salaam was, as stated previously, built to be segregated and the valley is a barrier that divides different areas of the city. There is a lot of crime in the area, which makes people hesitant to cross the park, they rather stay safe and take a detour around it. Because of the high crime level there are also many walls surrounding the area attached to different properties, these make it difficult to enter and to cross the park. In the proposal there are several new footpaths linking the different areas together. The crossing pathways have roofs at some places that protect the pedestrians from sun and rain. The roofs will consist of partly patterned metal, which will let some

of the sun trough and create a beautiful shade pattern on the ground and partly of solid metal to give total protection from the sun and rain. To increase the safety further it is possible to use the space along the paths for market stalls, the increase of people and activity will limit the crime opportunities. At night the footpaths will be lit by solar energy driven streets lamps, just like the walking path that goes around the area.



*Patterned roof.*



*Shaded footpaths with roofs going through the area.*



6:6 MARKET PLACE

Markets selling fish, vegetables, fabric etc. are well visited by Dar es Salaam’s citizens. A market is often a lively place and it could bring a function to the park and work as a gathering point in the area.

6:7 PLACE FOR PUBLIC SPEECH

Every city is in need of an open public area where different leaders, politicians and priests can reach out to the people. A part of the area is thought to be a large open space for public speeches in the city. Through our analysis we saw that there are few places that works as public social meeting places in the area around the river basin and also overall in Dar es Salaam. The chosen area has that kind of function today but is not defined for its purpose. By making the speaking place a part of an urban park it would become accessible for the people and a designated meeting place. A place like this would encourage communication and bring people together from different parts of the city at political meetings and other events. The park would become a meeting point instead of an edge which it is today.



6:8 URBAN FARMING

In the park there will be areas for urban farming. The farms would not only provide the city residents with locally produced food and encourage private business but it could also serve in an educational purpose. We have used indigenous plants throughout the park and the farming will add to this theme as the most common food products in Tanzania will be grown there. This will create an opportunity for people to learn about Tanzania’s food production and these could be excellent places for schools to have field trips to.

The urban farming could be organized in different ways, for example: private farming plots, cooperative farming and farming areas run by the municipality. The farming could be efficient by planting different plants in layers in the same area. In that way people can get more out of their farming plots and make a higher profit. The produced food or timber could be sold in local market areas.

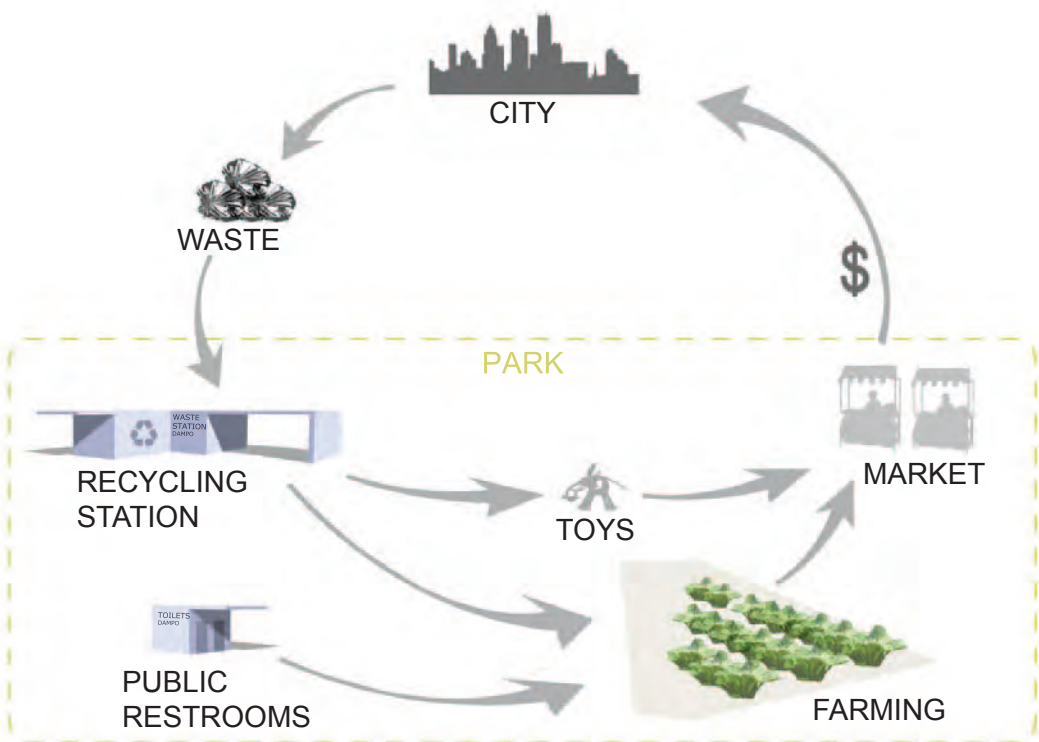
Organic toilets could be placed in the park to serve more than one purpose. According to Peter Morgan in “Toilets that make compost, low cost sanitary toilets could be used to produce valuable compost for crops” the urban farmers could possibly use the toilet disposal as fertilization in their farming plots.





6:9 RECYCLING STATIONS

In the proposal there is a number of recycling stations. These play an important role in the strive for a sustainable cycle of the city. The stations collect the waste from parts of the city, sort them and recycle as much material as possible. Compost waste could for example be used as an asset to the urban farms. The recycling stations will also provide work opportunities for the nearby inhabitants, the stations will sell recyclable items to make a profit. Another work possibility is to set up a small shop in connection to one of the stations, where toys and other objects that are made from recycled items are sold.



Recycling stations that helps creating a sustainable cycle in the city.



### 6:10 SPORT FACILITIES

In the centre of the area there are different sport facilities like football fields, basketball courts, volleyball courts, tennis courts, basketball courts, an outdoor gym and areas for play. Sports, as in many other countries, are of big interest in Tanzania and the national football team is located in Dar es Salaam close to the area. These sorts of activities attract people to the area during the day.



### 6:11 PLAY, EDUCATION AND RECREATION

Green areas in urban environments are important for the citizens in a recreational purpose. The park contains a big green area and some spaces are thought to be used for recreation and play. In these areas the contact with nature is important and there should be a lot of places to sit and rest, next to the hospital there will be a space allocated to the hospital's patients. There should also be areas for children to play both natural play and on playgrounds. At the entrances and at different places in the park there will be fun and educational signs explaining for example the natural cycle in the park, the eco systems to be found in different areas, the history of the city etc. The signs should be constructed with pictures and simple text to attract different ages and also people with reading difficulties. There will also be an educational nature centre in the mangrove forest.



### 6:12 NEW RESIDENTIAL AREA

The city of Dar es Salaam has very limited funds to finance the development of green space in the city. In order to get the means to realize the proposal, we have decided to incorporate some apartment blocks close to the sea. These will finance the up keeping of the park. The apartments will be in an area with canals, restaurants, cafés and a pier. Today the area is very unsafe, the development will hopefully make it safer and enhance the status of the area.



Playing fields in the area.



## 6:13 WATER ON SITE

As mentioned before, large parts of the site gets flooded during a few months every year, and other parts consists of marshes so they are under water all year around. This is not solely negative, being under water means that no one can build there and that is the reason that this land has been left untouched. However this also means that the land can't be used for recreational purposes either.

We have chosen to add ditches that will lead the water away, rise up the lowest parts and create a lake where a lot of the water will be collected. This will remove the water from the area so it can be used for recreational purposes. However, this will make building houses possible here.

The new lake will be constructed to work as a catchment area for storm water and also provide the park with an aesthetic value. The lake will take up space, but compared to the space the marshes takes up today it is a very small area. The lake could also become a focal point, which the marshes are not. To prevent the malaria mosquitoes to breed there, there will be several ditches that lead the water to the new deep lake. The soil that is removed when digging the ditches and the lake will be used to rise up the lowest parts of the area. This will eliminate the pools of shallow water and instead create one larger, deeper lake. It will also reduce the area that gets flooded.

## 6:14 THE INFORMAL SETTLEMENTS

The green space in the Msimbazi river basin is being reduced every year because of the informal settlements that are slowly moving further into the area. Instead of removing all the informal settlements, we have decided to keep the more organized ones along the edges of the area, but remove the ones in the middle of the river basin. By creating a border to the park we hope to keep the informal settlements from expanding further into the area.

## 6:15 THE MANGROVES

Mangroves are in danger of becoming extinct. Around the world they are cut down to gain money. In our proposal, a part of the mangroves have been cleared in order to make room for the new residential area.

As it is today, the mangroves are not popular in Dar es Salaam because they are so unsafe. People afraid to enter them or even to walk along the border of the mangroves. As the city rapidly grows and new sites for housing are in great demand, we fear that the unpopularity of the mangroves makes this a likely area to be cleared completely and built on.

The residential area will have several public places, for example a wide open area along the river, pocket parks, restaurants and cafés. The area will be places in the middle of the mangroves and will have a view on to the river and the forest. We hope that the status of the new area will transfer on to the mangroves, and that this will make people aware of both the beauty and the ecological importance of them. So by taking away a small part of them we hope to save the larger part of them in the long run.

The mangrove absorbs pollutions from water running through them. As the water in the Msimbazi river basin is heavily polluted, it would be good to keep as much as possible of the mangroves.

## 6:16 FINANCING THE PARK

The main source for financing the development of the park will be the new residential area. This area would become an attractive place for people to live and therefore attract people with a better economy, and it would be in their interest to have a nice and safe green area nearby. However this does not give us unlimited funds but although we have not made any cost calculations, we have tried to be cost conscious. In Tanzania manpower is cheap but not necessarily materials, so we have focused more on what can be created with the resources that we already have than adding things on. For example building ditches, creating a lake and shifting soil around is a lot of work, but not very expensive. New materials are more expensive so we had to be more restricted with these. But at the same time we think it is important to raise the status of the area and one way to do this is to make it obvious that the park has been invested in, materials is an easy way to show this. We therefore focused on a few areas where we thought the impact would be as big as possible, like the entrances, the footpaths, the central urban area and the pier and sea front. By investing in the area we hope that people will become proud of the park and want to

take care of it and preserve it.

We also created places that people get an income by looking after. Urban farms generate more food the more time that is spent on looking after them. The trash in the park can be sold by the recycling stations, so the more garbage that is being collected, the bigger the profit. By creating urban farms and recycling stations we not only provide job opportunities, but we also provide the park with free maintenance.

## 6:17 THE PARK FROM A SUSTAINABLE POINT OF VIEW

With all new development it is important to consider sustainability, both ecological, economical and social. This has been a focus in this project as well.

Economical sustainability:

- In the proposal there are new job opportunities, such as urban farming, markets, recycling stations and so on.
- By making the park feel like a safer place crime will hopefully go down. If crime goes down the city can spend their resources on better things than dealing with crime such as schools and creating jobs.
- There is also possibility to become self sufficient. By having an urban farm you can either sell your crops or use them in your household.
- The new park will finance it self by having a new residential area that pays for the costs for the park. So the area won't cost anything for the city but instead generate money.

Ecological sustainability:

- The Msimbasi river basin gets more and more narrow for each year that passes as more informal settlements gets built in the area. By creating a park with a clear border, the green area and the vegetation within it will be preserved.
- By only using domestic plant materials the vegetation and wildlife benefits.
- The recycling stations will decrease the trash in the park which will lessen the pollutions leaking in to the ground. This will also decrease air pollutions as less people will have to burn their waste. This affects not only the park, but also the adjacent areas as the garbage from them also could end up in the recycling stations.

- New foot and cycle paths will create shortcuts between different areas of the city. This means that people will have the option not to travel by car which could diminish car fumes and air pollution.

Social sustainability:

- There are new work opportunities in the park which can help reduce poverty.
- New meeting places can create a social hubs which can contribute to less segregation.

By preventing floods, the people living in the informal settlements around the area can get a more comfortable life, as they would have to spend less time worrying about and cleaning up after floods. No flooding would also mean that all parts of the park would function during the rain season.

Creating a park that the inhabitants can feel proud about will generate more positive feelings about Dar es Salaam overall and make them care more for their city.



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Bild saknas pga upphovsrättsliga skäl. För komplett arbete med bilder kontakta SLU Ultuna.

*Ficus sur, Cape fig.*

*Balanites aegyptiaca, Desert date.*

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Bild saknas pga upphovsrättsliga skäl. För komplett arbete med bilder kontakta SLU Ultuna.

*Mangifera indica, Mango tree.*

*Ficus sycamorus, Sycamore fig.*

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Bild saknas pga upphovsrättsliga skäl. För komplett arbete med bilder kontakta SLU Ultuna.

*Encephalartos hildebrandtii, Cycad.*

Bild saknas pga upphovsrättsliga skäl. För komplett arbete med bilder kontakta SLU Ultuna.

*Encephalartos hildebrandtii, Cycad.*

*Borassus aethiopum, African fan palm (FloridaKeys 2006).*

# PLANT MATERIAL

## 6:18 PLANT MATERIAL

The plant material chosen for the park is thought to create variation in character, add an aesthetic value, improve the local climate and enrich the city’s biodiversity. All trees and shrubs are indigenous to support the original ecosystems in Dar es Salaam, even if it already has been disturbed. The different

plants in the park are one of the subjects that could be on the educational signs that will be places around the park. On these people could learn about indigenous plants and what benefits they could bring. The different plants could hopefully also be used as an asset to the citizens when it comes to food and medicine.

PLANT NAME	CHARACTER	FLOWERS	FRUIT	USE
Balanites aegyptiaca, Desert date, Mjunju (Swahili)	Height 6-10m, evergreen tree, rounded crown with thorny branches, oval gray-green leafs	Yellow-green clusters, fragrant	Yellow-green clusters up to 5cm, bitter-sweet flesh	Fruits and leaves are browsed by goats. The gum is used to fix arrow-heads and spear heads to their shafts.
Borassus aethiopum, African fan palm, Mvumo (Swahili)	Height 25m, tall palm tree,	None	Large orange round fruit about 15cm long	Edible fruit, leafs are used as material for weaving, the sap is used for palm whine
Diospyros abyssinica, Giant diospyros, Mdaa-mwitu (Swahili)	Height 9-30m, tree with mushroom-shaped crown, dark slender trunk, glossy lance-shaped dark-green leafs	Small, creamy white (black when dried) in axillary clusters	Red or yellow (black when ripe) 1,5cm	The ripe fruit is favoured by birds.
Encephalartos hildebrandtii, Cycad, Mkwanga (Swahili)	Height up to 6m, non-branched palm tree without stem, appears as a rosette of palm leafs	None	Yellow cylindrical up to 60cm in the centre of the rosette	The seed-covering and the starchy pith of the stem are edible
Ficus sur, Cape fig, Ol-ngaboli (Maasai)	Height 25m, a spreading deciduous tree with rounded crown, broadly oval large leafs	None	Rounded figs in heavy clusters up to 3cm, orange to red when ripe	Ripe figs are edible, the bark is used for stomach-ache and diarrhoea, sap from cut branches is used for toothache, water from cooked roots is taken for coughing
Ficus sycamorus, Sycamore fig, Ol-ngaboli (Maasai)	Height 25m, a spreading deciduous tree with rounded crown, rounded large leafs	None	Rounded figs in clusters up to 4cm, yellow- red when ripe	The fruits are eaten by birds and monkeys, water from cooked bark is taken for stomach-ache
Maerua triphylla ssp. Johannis, Small bead-bean, Ol-amalogi (Maasai)	Height 4-6m, small tree or shrub with a round crown, evergreen	Small white with several flowers in a head	Brown and furry 5-10cm long	Edible fruits if cooked. Flowers attract bees and butterflies, the roots serves as a remedy for snakebites and cures headache
Mangifera indica, Mango, Mwembe (Swahili)	Height 10-15m, densely leafed tree with rounded crown, evergreen	Numerous small creamy flowers	Large oval up to 15cm in length, green to red, yellow when ripe	Edible fruits when ripe, rich of vitamin A and C, leafs are used as fodder and manure
Rothmannia urcelliformis, Forest rothmannia	Height up to 9m, evergreen tree or shrub with sweeping branches, dark-green glossy leafs	Trumpet-shaped creamy white flowers up to 10cm	Brown-black egg-shaped up to 6cm long	The bark is used for treating malaria
Tamarindus indica, Tamarind, Mkwaju (Swahili)	Height up to 30m, large tree with dense crown	Small yellow flowers with red veins	Pale brown 10 cm long	Edible sour fruit, used for flavouring, overripe fruit is used to clean different metals, leafs are used as fodder, the fruit is used for laxative and the root is used to ease cough and fever

“But the ancient mango trees have a dense dark-green foliage and give benignant shade; they create a circular pool of black coolness underneath them. More than any other tree that I know of, they suggest a place to meet, a centre for human intercourse; they are as sociable as the village-wells. Big markets are held under the mango trees, and the ground round their trunks is covered with hen-coops, and piled up water-melons.”

- Karen Blixen, Out of africa, 1937



# MATERIALS AND EQUIPTMENT

## 6.19 MATERIALS AND EQUIPTMENT

The two selected areas to be designed in detail are the area south of Morogoro road in the center of the area and the area closest to the sea, by the Bagamoyo road. Both of the areas had different problems to deal with and contained interesting qualities. The following part presents proposals for a new urban park and a new residential area by the sea.



Educational sign (Ignatieva 2010).



Bench.



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Street light with solar cells.



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Concrete pathway.

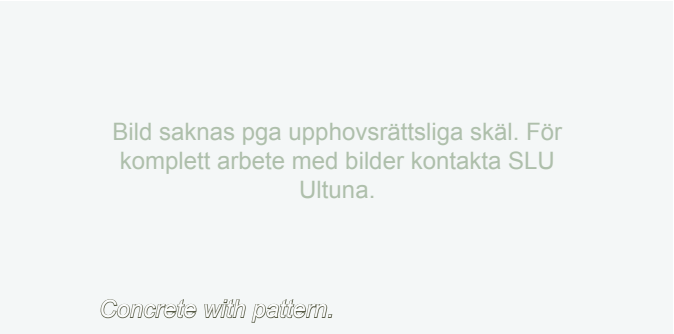


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Concrete with pattern.

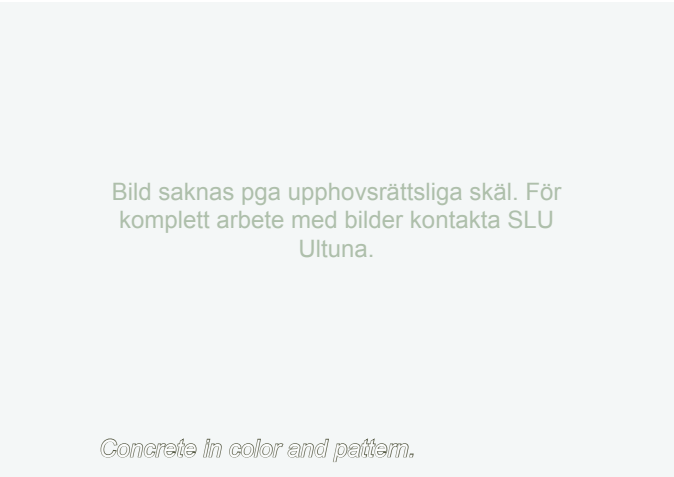


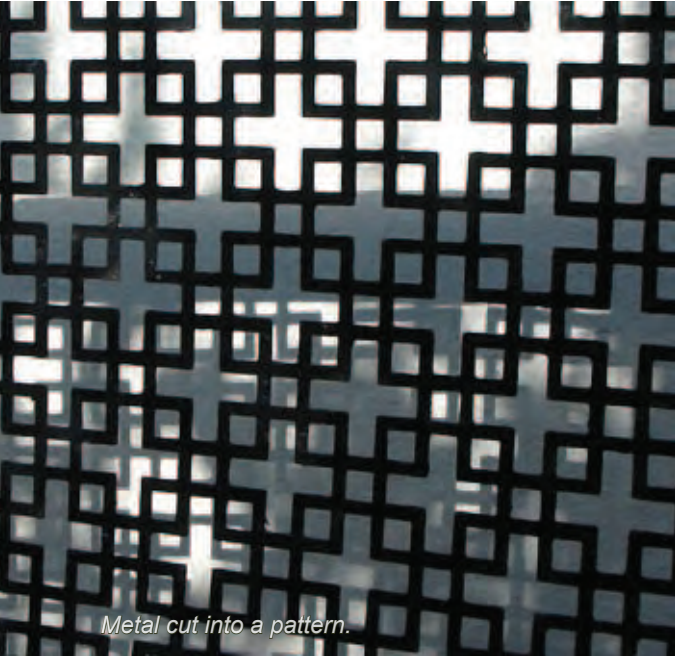
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Concrete in color and pattern.



Bild saknas pga upphovsrättsliga skäl. För komplett arbete med bilder kontakta SLU Ultuna.

Rubber asphalt.



Metal cut into a pattern.



Residential building.





# PROPOSAL: TWO SELECTED SITES - CENTRAL AREA

The two selected areas to be designed in detail are the area south of Morogoro road in the center of the area and the area closest to the sea, by the Bagamoyo road. Both of the areas had different problems to deal with and contained interesting qualities. The following part presents proposals for a new urban park and a new residential area by the sea.

## 6.20 THE URBAN PARK

The new urban park area is located in the center of the area along Morongoro road, close to Kariakoo and other busy parts of the city. This is today the liveliest part of the Msimbasi river basin with the most amounts of visitors. This will probably continue to be the most visited part of the area and will therefore be turned into an urban public park. A public park could make use of the areas qualities and also reduce some of the site specific problems that exist today. The main aspects when making the design was: to create shade, to connect the different parts of the city, to make it feel like a safe environment and to provide the area with activities.

The new park is cohesive with a strong spatial pattern, but still consists of different parts and is well connected to the other parts of the park. Along the sides of the area runs the bordering walking path, showing where the park begins and ends. The park consists of three main parts, an urban-like area, a sport area and a natural landscape park area.

There are three main footpaths crossing the park located along Morongoro road, in the middle of the area and in the south. These footpaths will connect the different parts of the city and will become nice walking strips through the area. There are different activities and services located in the park, there are several market places, a public speaking place, skate parks, a sport facility area with different playing fields and places for recreation and play. There are also activities in the public sector like a recycling station, police stations and public organic restrooms. There are a lot of trees to provide shade and give the park an aesthetic value by changing character by season. The footpath going through the middle of the park is also provided with a roof that protects the pedestrians from the sun and partly from rain. This footpath and the one along Moron-

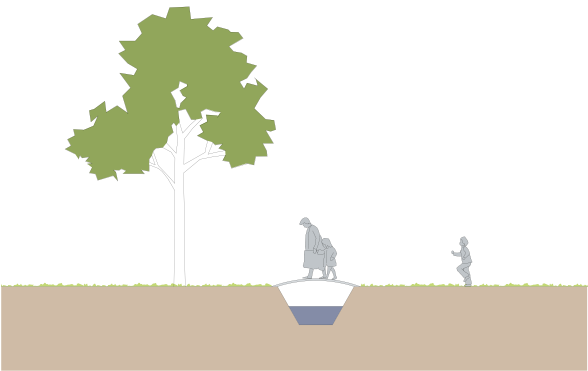


*View over the Urban park.*



goro road will have space for market stands along it to make the paths livelier.

All the material and plant material are, as in the rest of the park, domestic to show the materials used in Tanzania and to benefit the original ecosystems. Different patterns and materials will give an aesthetic value and help orientation in the park.



Ditches with small bridges in the park that leads the water away during heavy rainfalls and flooding.







## PROPOSAL: TWO SELECTED SITES - AREA BY THE SEA

### 6.21 THE NEW RESIDENTIAL AREA

The new residential area is located between the sea and the mangrove forest. It is supposed to become an attractive place to stay at and will hopefully raise the status of the park. We also plan that the new area will help finance the park.

The new residential area has a plan that is inspired from the plans of former zone I, II and III as well as from the informal settlements. The plan has likenesses to all of them, as it should feel connected to the rest of the city.

Zone I has wide streets with trees as do the new area. Zone II and III is more densely built in grid-iron patterns, which is a pattern that could also be found in the new plan. The informal settlements has developed gradually in organic patterns, the new area will also have a more organic form, following the natural landscape with the altitude levels and the river. Since the new area is located in a very sensitive area, the mangroves, it is vital that the area is designed with respect for the endangered forest. The area's location was chosen because it is the most attractive place to build at with all its qualities; it is close to the city center, good transport possibilities and most of all close to the sea.

The structure of the new area is a mix of straight and curved lines with buildings formed as blocks that are partly open. Between the buildings there are green streets, canals and several public places. The canals will have a mix of fresh and salt water and will therefore not be habitable by mosquitoes. The area is well connected to the park and is accessible for everyone.

The materials in this area will be durable and have high quality. An important aspect is also to use as cool materials as possible, meaning materials that doesn't reflect or retain heat. The frame walkway of the park becomes a shaded walkway along the river in the new residential area. The walkway continues out to the pier and the walkway along the beach. In this way there will be accessible footpaths going through the area.

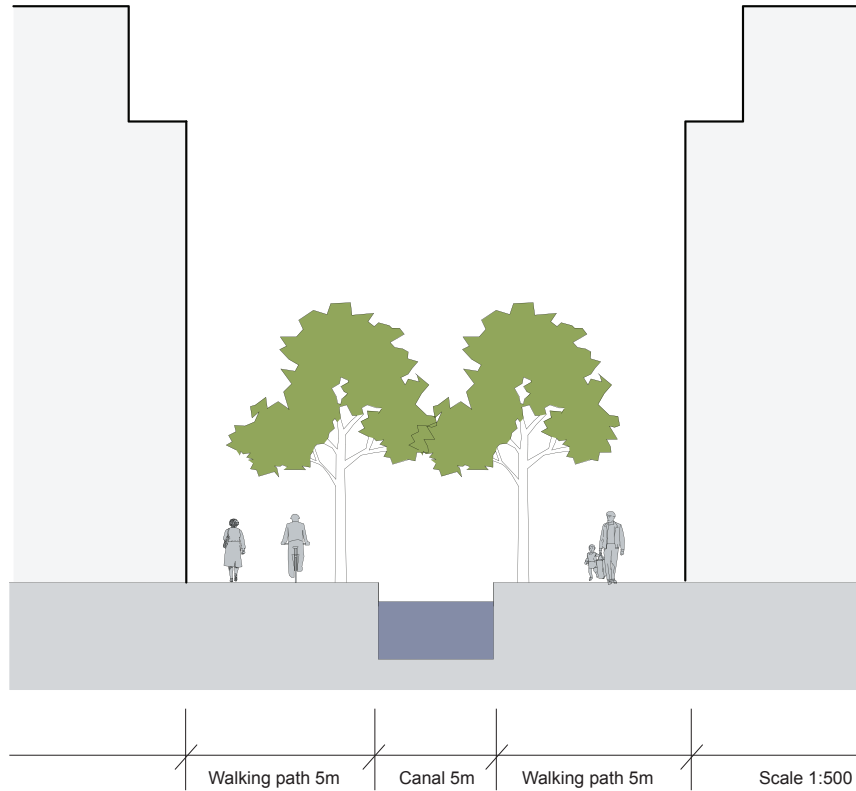


View over the new residential area.

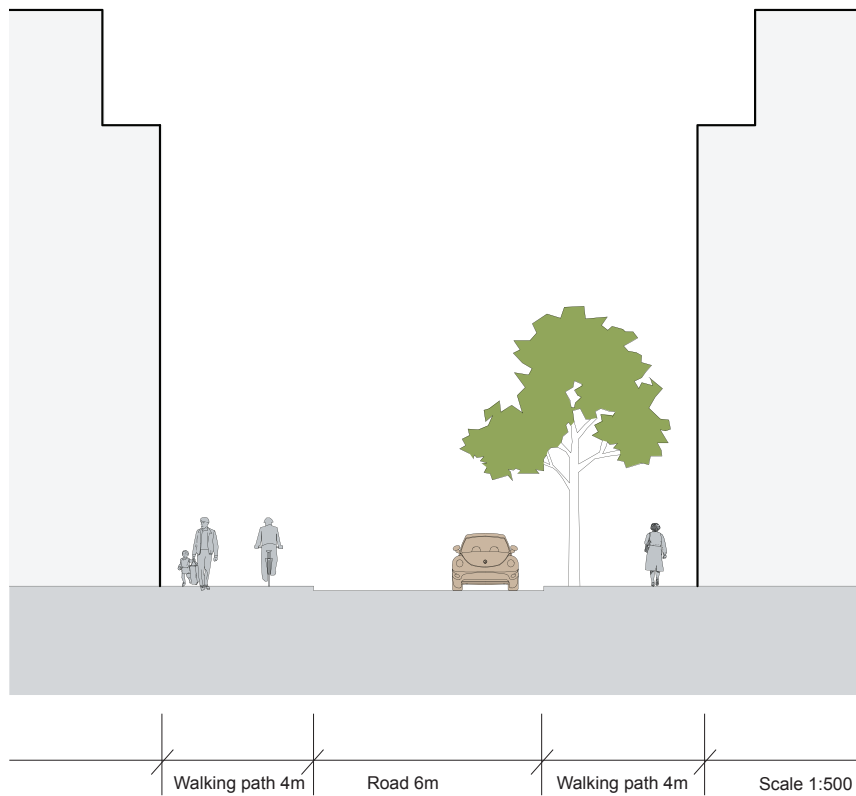








*This street is the street running closest to the river in direction from the ocean in to the park. It is for pedestrians only wide paths on each sides and a canal running in the middle. On both sides of the canal there are trees.*



*This street type is leading up from the river. It has footpaths on each side and in the middle there is a space for cars to park on one side and drive on the other. There are trees planted on one side. These streets all lead up to dead ends. With this solution cars will be limited but all buildings would still be reached by vehicles and the residents will be provided with some parking space.*

## 6.22 THE STREETS

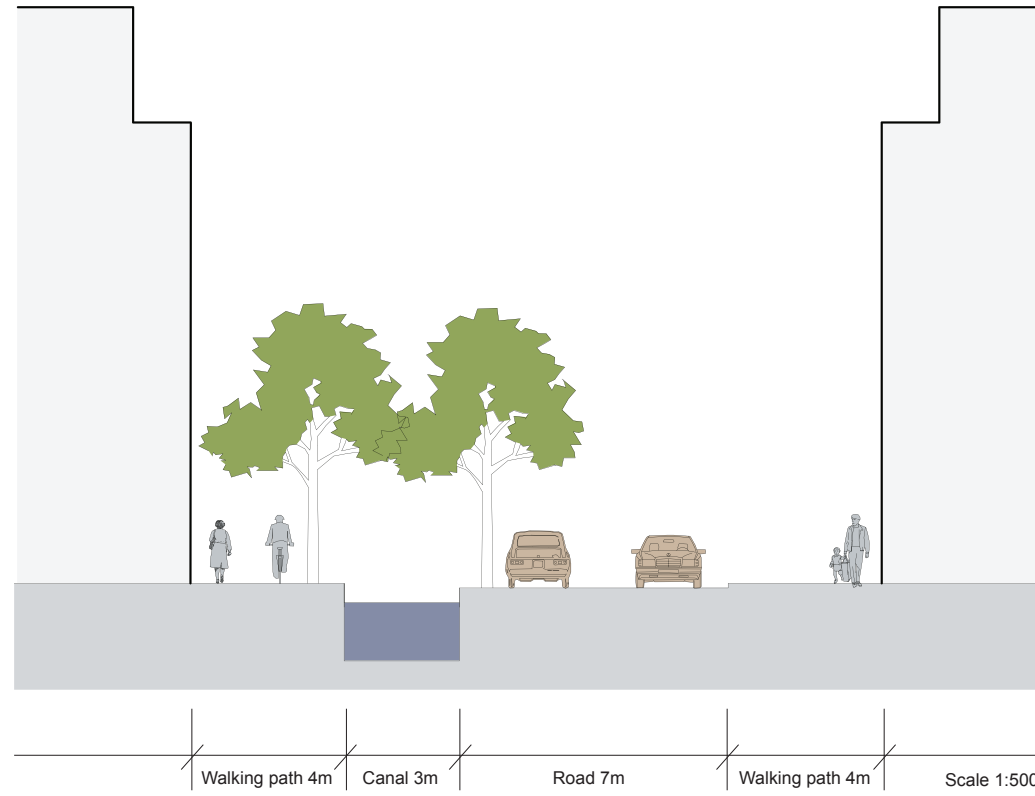
In the new residential area the pedestrians has been prioritized. The sidewalks are wide and the streets are narrow to keep down the speed of the cars. The area will not be a passage to get to any other parts of the city by car, so the number of vehicles coming here will be limited. Therefore there is only one street passing through the area, the other ones are either dead ends or for pedestrians only. To connect the area to the park the streets have an organic layout and the street along the river is connected to the walkway of the park. The river and the sea are elements that are a part of the area. Along the roads going from the river in to the park there are canals with water from the river and the sea when the tide is high. The streets all have trees with species that could be found in other parts of the park. In the area there are three types of streets.

## 6.23 RESIDENTIAL BUILDINGS

When deciding what kind of residential buildings to put on the site we looked at new builds in Dar es Salaam. Traditional swahili houses are low with small yards, but recent buildings are often very high, especially in the city center districts like Upanga and Kariakoo. Dar es Salaams newest venture is a new district called Kigamboni New City which is planned to be located just opposite the ferry terminal in the city center. The area will be almost 65 000 000 m2 and will contain residential areas, business areas, industry, university, military, tourist zone, parks and so on. The estimation is that 500 000 people will live there and of those about 88% will reside in apartment buildings. These buildings will be between four and fifteen floors high. There are several areas of low-rise buildings as well as mixed-use areas (Ministry of Lands and Human Settlements Development). The Kigamboni New City is a huge new project and with such a large investment for the city, we trust that they are certain that apartments are what is needed and wanted in Dar es Salaam. This project has worked as inspiration to the buildings in our proposal.

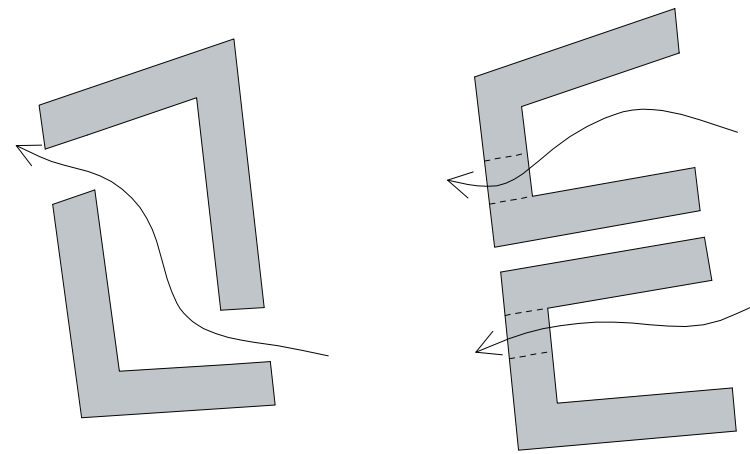
As the new residential area will be located in the mangrove forest, we wanted the area to take up as little space as possible but still fit the necessary number of residents. Therefore apartment buildings were necessary to fit the right number of people to be able to finance the development of the park. But it is not only a financial issue, if a city is going to be sustainable it needs to be densely built. However we have decided to only make the buildings five floors high although the area could be denser with higher buildings, we wanted the area to be a part of the park not to take over the park.

The buildings consist of blocks that are partly open, this is to provide the residents living there with a nice sea view and also to use the cooling breeze coming from the sea to create a better climate in the buildings. All buildings also have green yards that have outdoor kitchens for cooking since cooking outside is popular in the hot climate.

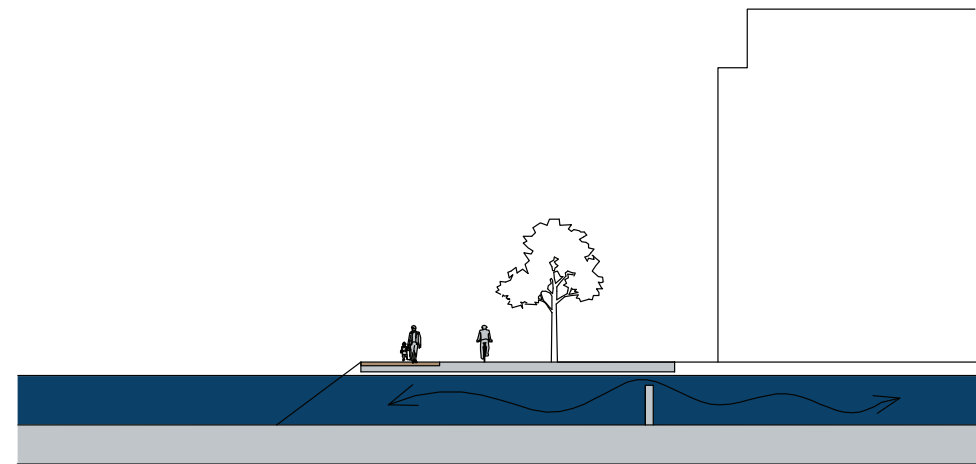
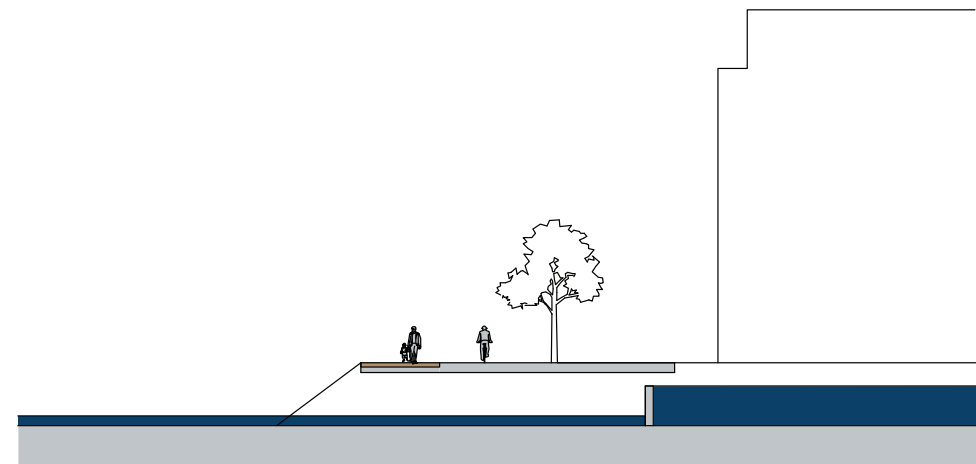


*This is the street that is running in the same direction as the river only further into the area. In this street cars can pass through the area, it consists of wide footpaths on either side, a canal with trees on both sides and a space for cars going in both directions.*

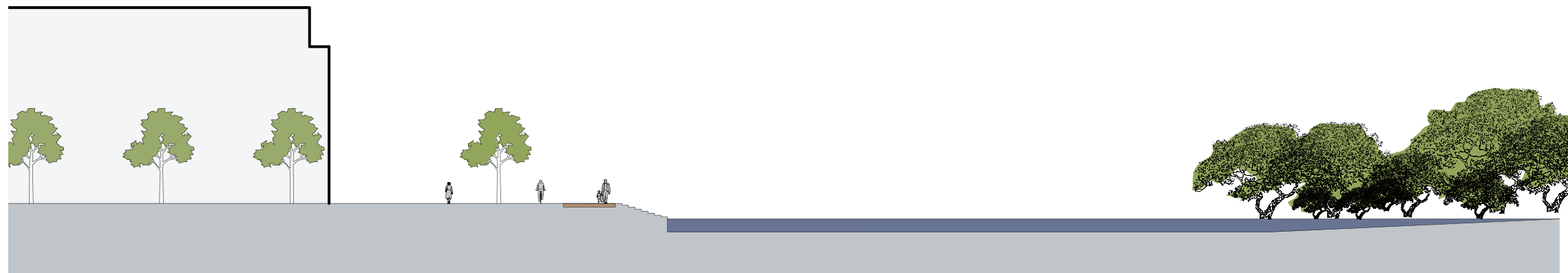




*The buildings have been designed to take advantage of the natural breeze that comes in from the sea. Closest to the river the buildings are U-shaped, but at their base they have a large opening that allows wind to flow through them. The blocks further back consists of two L-shaped buildings that are placed opposite of each other. This layout also ensures a natural flow of air through the blocks.*



*The tide makes the water level differ with about two meters twice each day. To stop the water level to change so much in the canals they will have a barrier in each end. The barriers will be 30 cm lower than the water level at high tide. This will ensure that the canals are always well filled. At high tide the water comes up over the barriers, this makes the water flow through the canals keeping the water fresh.*



Section showing the buildings, the wide walkway along the river, the river and the mangroves.

Scale 1:1000















# 7. DISCUSSION







Sunset at Zanzibar.

# DISCUSSION

The main question for this study was: Would it be possible to make the Msimbazi river basin into a public park and recreational area and what features would it need to contain?

The sub questions were:

- Are the people in Dar es Salaam in need of a big public park and if so, who would use it?
- Is it physical possible, with all the site specific problems, to transform the Msimbazi river basin into a public park?
- Could some social difficulties, such as crime and segregation, be improved with a new park?

## 7.1 HAVE WE MET THE BRIEF?

We had a general aim with the project, to make a design proposal for a park and recreation area where the Msimbazi river basin is today. A park could be designed in an endless amount of ways, but we also had to meet all the site-specific issues.

We have a design that we believe in and that we think solves as many of the specific issues as possible.

Some of the problems can perhaps not be solved by a new plan, such as the polluted water on site. The water has a number of origins and the pollution is something that has to be resolved on a larger scale by the authorities. Other solutions might diminish the problems but not solve them completely, like all the crimes committed in the area. Our proposal will hopefully reduce the number of crimes, but to think a park design will completely erase criminality within an area is probably hoping too much.

## 7.2 EVALUATING METHODS

Our background study that was based on literature studies, observations and conversations gave us important information about the area and felt as a good way to gain information about the area, Dar es Salaam and Tanzania. These methods helped us get started and gave us references to strengthen our upcoming ideas and arguments throughout the project.

All the specific methods that we used for site survey and analysis we think helped in our process to generate a proposal. The surveys were mainly based on maps and on on-site observations. The area could only be visited in daytime which

made the work a bit difficult but with the available map material and information about the area we got a good idea of how the area functions today.

The structural analysis and the SWOT analysis helped to define the areas components and qualities. The method of using case studies served as inspiration and it was valuable to see how areas with similar problems had been developed. Perhaps we could have studied closer how the site specific problems were solved in the different cases and used that in our proposal. At the analysis stage many new questions came up and to get answers we had informal conversations with professors at the university. The conversations we had generally gave a lot of necessary and valuable information.

Our procedure in our design process contained brainstorming and discussing and sketching ideas. The methods worked well to form a proposal, perhaps we should have tried to sketch more when we were in Dar es Salaam to be able to get the opportunity to get more feedback from our supervisor.

Since we were in Dar es Salaam for a fairly long period of time we had the possibility to go back to the site for another analysis if we discovered that there was information that we lacked. This helped to collect all the data that we needed and when we came back to Sweden we felt that we had all the material we needed to continue with our design proposal. Though making the site survey and analysis was not without problems, the site was, as mentioned, hard to access and so unsafe that we always had to have a guide with us when we were there. Some parts were so unsafe that we could not go there at all. This meant that we had to adapt our survey and our analysis slightly, in some cases we had to make them a bit less specific than we had wished at first. Also the mere size of the area (approximately one by five kilometers), made it impossible to be too detailed in the survey and analysis. However, our proposal is also made in a larger scale, which makes us confident that any misses in the surveys and analysis is not vital to the outcome of our proposal.

It might have been beneficial if we had communicated more with the dwellers in the area. We mostly discussed our project with other students, teachers, professors and other experts. They had a lot of knowledge which was very beneficial to us, but talking more with the people living or working in the



Msimbazi river basin might have given us another perspective. To base the background of this thesis on interviews would probably have generated a different proposal, which would have been interesting to compare to ours.

The climate in Tanzania changes a lot over the year. We were there during the warmest season which had almost no rain. As one of the largest issues that we had to deal with was how to handle the annual floods, it might have been good to be there during the rainy season to witness them in first hand. We studied maps and tried to imagine the area under water, but seeing it would have given us a better understanding of it and could have resulted in other solutions to the problem.

The main questions we asked ourselves in the beginning of the project were all answered with the information we gained through our different choices of methods.

### 7.3 LIMITATIONS

It took us a long time to get an understanding of all the problems within the area. We choose to make a proposal that dealt with all the problems in general manner rather than to focus on one specific issue. We could for example only have written about how to make an area that is infested with malaria mosquitoes free from them and then implemented it on the Msimbazi river basin. We could also have based our thesis on what the policy on informal settlements should be in the area, if they should be kept or taken away or if some parts should be removed and then which parts of them that should be spared. Another topic could have been how to make well-functioning urban farms within the area. But we wanted to make a proposal that was as realistic as possible and this meant dealing with all the problems that came with the area. It was very interesting learning about all of the issues, but it took a lot of time. Even though we only wrote about them in short, we had to do a lot of research into all of the subjects. If we had started the project over we might have chosen a smaller area to work with, that had only one or two major problems. But at the same time, seeing the finished result, we don't have any regrets.

### 7.4 QUESTION AT ISSUE - COULD THE MSIMBAZI RIVER BASIN BE DEVELOPED INTO A PARK?

The Mzimbasi river basin is a site with many problems to be solved but still the site has many positive qualities that could become an asset to the people. The conditions at site are challenging but far from impossible to improve and develop. Dar es Salaam is a city going through constant development. The importance of sustainability is major in cities in developing countries since they often don't have time to keep up their production, planning strategies and energy supply with the growing population. A development of the river basin could really become an asset to the people in the city both from a social, ecological and economical perspective.

### 7.5 SO ARE THE CITIZENS IN DAR ES SALAAM IN NEED OF A PUBLIC GREEN AREA?

The lack of public spaces in the city shows clearly from observations made from visiting the city centre in Dar es Salaam. People have no place to go to relax, play and get away from the stressful city pulse. Since there are hardly any green public places in Dar es Salaam today the streets and, if existing, sidewalks are used as an urban living space and thereby shared with the cars and heavy traffic load. This makes the spatial pattern of the city even more confusing and disoriented.

Dr. Mrema asked us the question if the people in Dar es Salaam really were in the need of a park, would they use it and enjoy it? The citizens have a functioning life already, are they missing a park?

We think that a new developed green area would benefit the city and the population in many ways. The citizens may not miss a park or public space since they are not aware of the benefits that would come from it. The major problem with a new park would be to get people to use it and spent time there. Many people in Dar es Salaam are very poor and the question is if those people would prioritize to spend time in a park when they have problems just making it through the day.

In our design we have tried to bring different activities into



*Shade from a tree creating an interesting pattern on the ground.*





Sunrise at Mount Kilimanjaro.

the area and mix that with a recreational environment. Activities like urban farming, a market place, a bus-stop and sport facilities would benefit the people and also naturally attract people to the area and the new park. The area would also function as a public meeting spot and would therefore become a central and well known area in the city. By mixing profitable land use with a pleasurable environment we think that the citizens of Dar es Salaam would appreciate the new public park.

### 7.6 COULD SOCIAL DIFFICULTIES BE IMPROVED?

Dar es Salaam is a city where a high percentage of the population suffers from poverty. As in other cities with the same problem this has led to a high level of criminality and segregation.

We have kept these issues in mind when developing our proposal. To reduce the criminality in the park we have added several activities as a lot of people in an area reduce the crime opportunities. New jobs within the park can lead to less unemployment, which can lessen criminality. To further ensure the safety of the people visiting the area we have added another police station. The dense vegetation has in some cases been opened up to enhance visibility and lessen the number of hiding places. For the same reasons, the new planned vegetation consists mainly of trees and very few shrubs. This does not automatically lead to fewer crimes, but a safer feeling within an area leads to more people being there which makes it safer.

To reduce segregation there is a number of meeting places that can be used by all the inhabitants of Dar es Salaam, such as sport fields, markets and a national speaking place. The new paths going through the park will link different parts of the city, making them appear closer to each other. By creating job opportunities, poverty can somewhat be reduced which will diminish the local gaps in the society.

We are aware that all these issues cannot be solved overnight and not by planning a park, but we believe that it is a step in the right direction.

### 7.7 WHAT IS THE RIGHT THING TO DO WITH THE INFORMAL SETTLEMENTS?

As the informal settlement areas are homes to thousands

of people, to remove them all would be devastating for the people living there. To remove them would perhaps solve the problems of sanitary and planning but it would also create new problems that might be even harder to solve. The city cannot provide housing for all the people living there, and evicting thousands would only add to that problem. It would also mean that a lot of very poor people would lose all of the money they invested in their houses. The affected people would not have the resources to buy a house in a formal area and would be forced to move far away from the city center. Most working opportunities are located in the center of the city and many people would then have to spend a lot of time and money to get to and from work.

The site is very large and in some parts very unsafe. If we were to remove all the informal settlements and not add any new houses, the park could possibly become even more unsafe. In large areas that can't be overlooked the possibility for crime increases. By keeping the informal settlements the park gets more narrow which enhances the visibility. Adding the new residential area would get people into a part of the park which very few enter today since it is very dangerous.

### 7.8 INTERFERING WITH THE NATURAL ECOSYSTEM

The Mzimbazi river basin is not yet a developed area. Because of this it has largely maintained its natural ecosystem. What influences the ecosystem today is for example the waste dumped here, the polluted water, the urban farming, the expansion of informal settlements and the influences of man that leads to more floods. We hope that our proposal will diminish some of these influences, but at the same time will the development of the area have a greater impact on the ecosystem than today's usage of the space. However the development will hopefully have so many positive effects that they will outnumber the negative. Some examples of this are:

- Cutting down parts of the mangroves. The mangroves are diminishing and saving them are important for the future. By cutting down a part of them the park will become safer and by placing a new residential area there the development of the park will be financed.

- Diminishing the swamp areas. The swamps are a part of the local ecosystem. They are breeding grounds for malaria mosquitoes, so by diminishing them health in the area will improve and a larger part of the park can be used.



- Digging a lake. By creating a lake some grassland will be removed, but the lake will take the water from the swamps which will reduce them and lead to an increase of grasslands.
- Creating the urban park. The urban park will remove some of the existing plant life; however there will be a lot of new trees planted there. Other benefits from the urban park are that the local economy will get a boost and the number of visitors in the park will increase.
- Developing the urban farms. The urban farms will increase the biodiversity in the area, but by adding plants that do not occur there naturally. Other benefits that they bring are a better local economy and an added number of people in the park which will make it safer to visit.

In our proposal the area as a whole will get more developed and get more visitors which can be hurtful for the local ecosystem. But by doing this we hope that the area will benefit in the long run. Leaving it as it is now would not save the plant and wildlife there as the area is thought to have little value and is constantly being built on and garbage dumped there. So by taking away some of the plant material, the majority will be spared.

## 7.9 SWEDS IN TANZANIA

We spent in total nine weeks in Tanzania. This gave us a brief understanding of the Tanzanian culture and way of life but to truly understand any country and its people, more time is required. Our proposal is based on collected facts and ideas from these nine weeks, if we had lived there for years instead of weeks it might have looked completely different. However it would not necessarily result in a better proposal, having an outside perspective can in some cases be beneficial as it makes you less partial. Based on our time in Dar es Salaam and the comments from our tutor there, Dr. Mrema Liberatus, we think the proposal would work well on this site.

We tried to get as much work as possible done during our nine weeks in Tanzania, a lot of time was spent on just getting to know the country and the culture. This was essential for our thesis, but hard to show on paper. There were some cultural clashes, especially in the beginning, but since everyone we met was very friendly, there were no major problems. One big difference was the time aspect, which we soon had to adjust to. Everything took more time in Tanzania than

it would have back home. Internet at the university was extremely slow, to access your email could easily take half an hour, downloading a pdf could take several hours. Electricity could be gone for days. If we were promised a report the next day it could show up the next day, but it was just as likely that it showed up 6 weeks later or not at all. Some of this could probably be explained by the extreme heat. It was impossible to work fast when it was so warm.

There were some communication difficulties, sometimes because of language, not everyone in Tanzania speaks English well and some doesn't speak English at all. But most of the time it was because we had different frames of reference. Things that were obvious to the people living in Dar es Salaam could be things that we had never come in contact with before. One example of this was the informal settlements, how they were developed, who lived there and how they made a living. This was clear to everyone that lived in Dar es Salaam but not to us.

## 7.10 THE FUTURE OF THE MSIMBAZI RIVER BASIN

There have been wishes within the authorities to turn the MzimbaZI river basin into a park and according to city plans it is marked as a public area that should be used for recreational purposes. However due to lack of funds and other higher prioritized projects, the area has never been developed. We hope that this thesis will serve as a basis for future plans and development of the MsimbaZI river basin. Some issues that we believe may be problematic when creating the park are reducing the floods, keeping the informal settlements from spreading into the area and keeping a good balance between making a park that is for recreation and one that is useful for the citizens. These issues are not unsolvable and hopefully the area will become a park that contributes to the lives of the inhabitants of Dar es Salaam within the near future.

A new park would be a substantial investment for the city of Dar es Salaam and it would therefore not be realistic to develop the whole area at the same time. Parts of the park with different priority could be built at different times and eventually be linked together. The urban park would probably be the best part to start with since it is the most visited area today and a lot of the new activities located there would benefit the people in both a short and a long term perspective.



Flowering tree at Zanzibar.







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## 8.3 ORAL SOURCES

Dr. Liberatus Mrema at the Ardhi University in Tanzania



## 8.4 PICTURES:

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Ignatieva, Maria. Professor at the Swedish Univerity of Agricultural Siences.